FOUNDED IN 1856

RAILWAY AGE

THE STANDARD RAILROAD WEEKLY FOR ALMOST A CENTURY

FEBRUARY 12, 1951

SPRAYING Nalco H-170-B from Illinois Central Spray Car in the Illinois Central Yards, New Orleans, Louisiana. Note tall, hard-to-kill grass.

AFTER Nalco H-170-B application, weeds and grasses reached by the spray are dead. H-170-B will also inhibit regrowth here.

Nalco H-170-B
WEED and GRASS CONTROL
Controls Tough Johnson and Bermuda Grass on the ILLINOIS CENTRAL

TOUGH, hard-to-kill grasses, such as Johnson and Bermuda grasses, are controlled with Nalco's powerful new formula, H-170-B. Combined with its top killing action, H-170-B penetrates extremely rapidly and causes extensive root-kill which cuts down regrowth to a great extent.

Despite its potent weed-killing action, H-170-B is safe to use where livestock may be grazing, and it will not contaminate water supplies. Low volatility makes storage safe and eliminates fire hazards while spraying. Application may be made with any type of sprayer.

Full details on Nalco Weed Control and the availability of Nalco Spray Cars is available promptly from your Nalco Representative, or direct from Nalco.

Congratulations to the ILLINOIS CENTRAL on 100 YEARS of PUBLIC SERVICE

NATIONAL ALUMINATE CORPORATION

6200 West 66th Place • Chicago 38, Illinois

In Canada: Alchem Limited, Burlington, Ontario

THE Nalco SYSTEM . . . Serving the Railroads through Practical Applied Science

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Vol. 130, No. 7 February 12, 1951

RAILWAY AGE

With which are incorporated the Railway Review, the Railroad Gazette, and the Railway-Age Gazette. Name Registered in U. S. Patent Office and Trade Mark Office in Canada.

IN THIS ISSUE

EDITORIAL COMMENT

ILLINOIS CENTRAL CENTENNIAL

GENERAL ARTICLES

DEPARTMENTS

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Railway Age Railway Mechanical & Electrical Engineer Railway Engineering & Maintenance
Railway Signaling & Communications Car Builders' Cyclopedia Locomotive Cyclopedia
Railway Engineering & Maintenance Cyclopedia American Builder
Marine Engineering & Shipping Review Marine Catalog & Buyers' Directory
Books covering transportation and building

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Cut Costs, Step-Up Efficiency

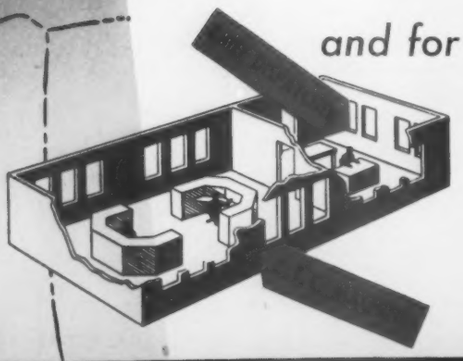
with "UNION" C.T.C.

Can Extra 5023 West get out of the yard ahead of 19? How far can he go for 14? Will 409 be in from the branch in time for Extra 3041 East to pick up the cut of cars on his head end? How long will it take to ice the cars on 5023 West?

Answers to all the questions involved in division-wide operations usually are known only at division headquarters . . . yet they have an important bearing on operating efficiency and costs.

With your "Union" C.T.C. machine located at division headquarters . . . those responsible for getting trains over the road can arrange meets and passes on a moment's notice . . . and since they are constantly informed of train location and track availability, maximum advantage can be taken of "breaks" as they occur. Therefore, for lowered operating costs . . .

and for maximum efficiency . . .



Concentrate Control at Division Headquarters

UNION SWITCH & SIGNAL COMPANY

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

WEEK AT A GLANCE

SHADES OF VALLEY FORGE! "Our defense efforts are being badly crippled. . . . This strike . . . is paralyzing our country at a time when . . . we are in the greatest danger in our history. . . . All of us have to put the national interest ahead of personal interest. The question is not how much we are entitled to as individuals—the question is how much we can contribute as individuals. This is a time when the railroad workers, and all the rest of us, have got to stay on the job, because the very survival of our country is in danger. Railroad workers—and all other workers—are entitled to fair wages and working conditions. Moreover, they are entitled to use every legitimate means to get what they think is fair. But a strike against the whole nation, especially in a time of great peril, is not a legitimate means. . . . I ask you . . . to accept your responsibility as Americans to our fighting men in Korea, to your fellow countrymen. I ask you to report for work on the next shift. Don't put it off. Settle this with your own conscience. No matter how serious your grievances may seem to you, they cannot justify the harm you are now doing to your country. You have a right to a fair settlement of any differences you have with railroad management. But you have no right to stop your country's defense effort. You have no right to strike against your government."—*From the February 5 radio and television address by Charles E. Wilson, defense mobilization director, on the switchmen's strike.*

Our own editorial comment on the strike, and on the railroad labor situation in general, appears on page 85. A detailed summary of developments in, and effects of, the strike begins on page 121.

"SHIMMY": The "shimmy"—we've been told—was pretty nice, when it was done by Gilda Gray. (Remember her, way back when?) But it's not nice at all when it's done by passenger car trucks. The cause of such truck "shimmy" is under investigation, and the results to date were reported to the A.S.M.E. by S. G. Guins, of the C. & O. Mr. Guins' paper is abstracted, with explanatory illustrations, beginning on page 117.

INTRODUCING MR. TARBUTTON: Ben J. Tarbutton—whose election as president of the Central of Georgia was briefly reported two weeks ago—is a newcomer to the ranks of executives of Class I railroads. A resume of his background and of some of his ideas appears on page 120.

"MAIN LINE OF MID-AMERICA": February 10 was the 100th birthday of the great railroad which proudly bears that distinguishing—and distinguished—designation—the Illinois Central. It is a railroad with a colorful history; associated with it have been some of the greatest men in American government and American business. It is a railroad fortunate in its present outlook, with good management, good physical property, improved finances. And it is a railroad with a promising future—subject, to be sure, to especially intense government-subsidized waterway competition, but serving an increasingly populous and prosperous territory—made so in no small part by the railroad itself. A large part of this issue is devoted to the Illinois Central. On page 88, a brief description of its own centennial plans, which are definitely designed to further its long range program of management-employee, railroad-customer, and railroad-public relationships. On page 90, a symposium of opinions on the Illinois Central by a "panel of experts," including the governor of Illinois; the mayor of New Orleans; the former president of other railroads; an investment analyst; a shipper; and a passenger. On page 94, an abstract of a February 8 address to the American Newcomen Society by Illinois Central President Wayne A. Johnston. And on page 101, a detailed analysis of the men, the money, the materials and the management that have made the Illinois Central what it is today.

TOO LATE—for inclusion in the regular Equipment and Supply news columns came word that the Lehigh Valley has ordered 350 gondola cars from the Bethlehem Steel Company.

ORDERED BACK TO WORK: The "sick" switchmen were ordered by President Truman and Secretary of the Army Pace, on February 8, to resume work by 4 p.m. Saturday, February 10, or face loss of their jobs and their seniority. The effect of the order was somewhat cushioned by announcement of an interim pay increase, retroactive to last October 1, but in an amount less than provided in the union-rejected December 21 "memorandum of agreement." The full text of the President's statement, and a summary of the action taken by the Army as a result of it, are published in the news pages.

STABLE ROADBED: It isn't often nowadays that the editors of *Railway Age* have a chance to write about construction of a wholly new main line of railroad. But the Burlington's Centennial cutoff in Missouri gives such an opportunity. Starting on page 113 is a fully illustrated description of the high design standards and careful control of grading operations which are being used on the 70-mile line to insure maximum compaction in fills.

IN THE NEWS: Nickel Plate to clear up all arrearages on preferred stock, by payment of $45-per-share dividend; may split common five-for-one.—New Orleans Public Belt orders two diesels from Baldwin-Lima-Hamilton to complete dieselization.—Wreck of Pennsylvania commuter train at Woodbridge, N. J., on February 6 results in death of 83 persons, injury to several hundred.—Southern increases common dividend.—New Haven orders 10 diesels, A. C. & Y. three, all from Fairbanks, Morse.—Long Island Rail Road Commission presents to Governor Dewey draft of bill setting up public authority to acquire and operate railroad.—Jelsma calls "private" truckers harmful to all transportation.—I.C.C. rejects truckers' rate plea.—O.P.S. puts ceilings on scrap.—I.C.C. revises diesel brake rule; delays new auto rates; sets next mail pay hearing for February 26.—C. & O. orders 4,900 freight cars.

the Illinois Central...

On February 10, 1851, an ambitious new railroad came into being. Its original line—from Cairo to East Dubuque, with a branch from Centralia to Chicago—measured 705 miles, more than *twice* the length of any other railroad then in existence.

The Illinois Central has always been a most progressive railroad. Throughout its first hundred years, it has kept its hopes and its standards high. Today, on the threshold of its second century of service, it is still a *young* railroad.

The Adams & Westlake Company (a ninety-four-year-old youngster) is proud that through these years they have been privileged to supply the Illinois Central with ADLAKE Railroad Specialties and Equipment.

Manufacturers of ADLAKE Specialties and Equipment for the Railway Industry

in the busy Chicago area—

I.C.'s four P-A-X switchboards linked in a single network

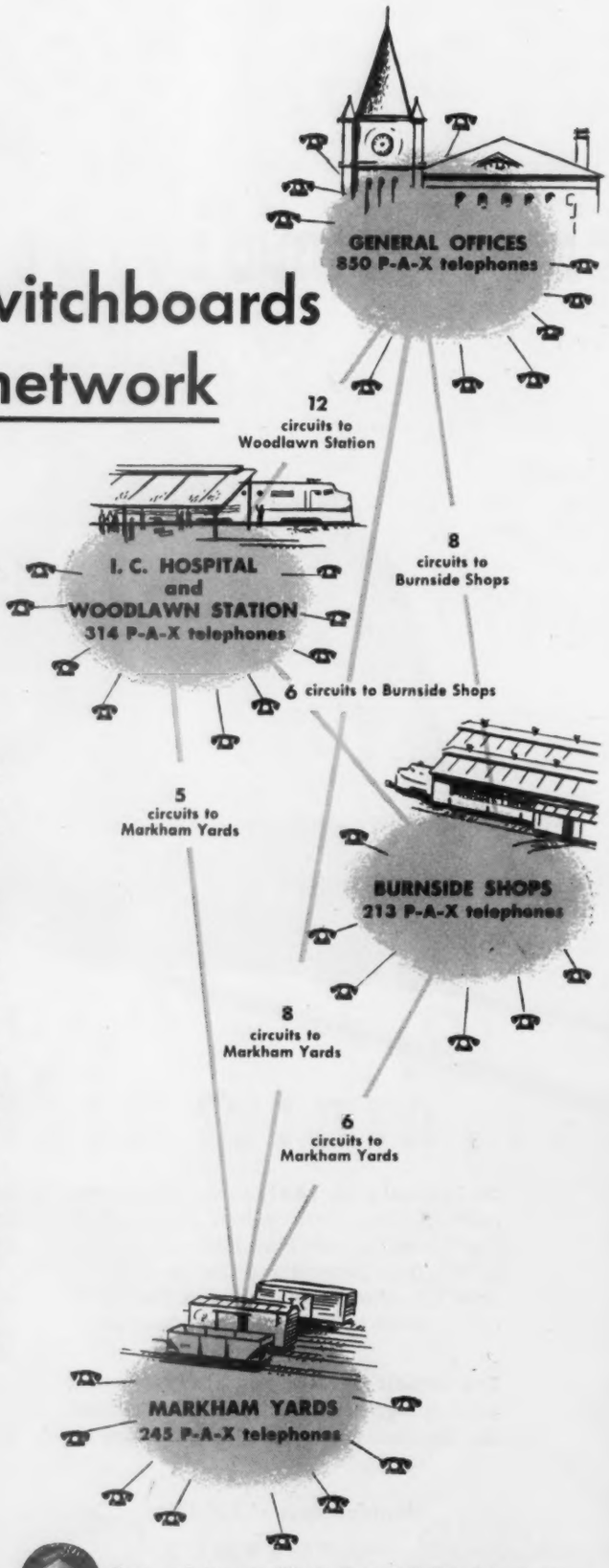
handle 16,000 telephone calls daily!

Unified communications speed work, coordinate operations.

From the General Offices of the Illinois Central in the heart of Chicago—to Woodlawn station and the Illinois Central hospital—to the Burnside car shops—and on south to the Markham classification yards—stretches a 37-mile P-A-X automatic telephone network. An individual P-A-X switchboard at each location provides internal communication, and all four switchboards are linked together to provide complete automatic telephone service between all points.

Consider the value of this P-A-X network, with its 1,662 telephones completing *more than 16,000* calls a day! Those calls help to keep things moving for the Illinois Central!

Automatic Electric's engineers can help you plan the P-A-X system *you* should have. Just put your problem in our hands. Write: AUTOMATIC ELECTRIC SALES CORPORATION, 1033 West Van Buren Street, Chicago 7, Illinois. In Canada: Automatic Electric (Canada) Ltd., Toronto. Offices in principal cities.



P·A·X business telephone systems

AUTOMATIC ELECTRIC

Congratulations to Illinois Central Railroad upon completion of 100 years of service to American commerce and industry and to the American traveling public.

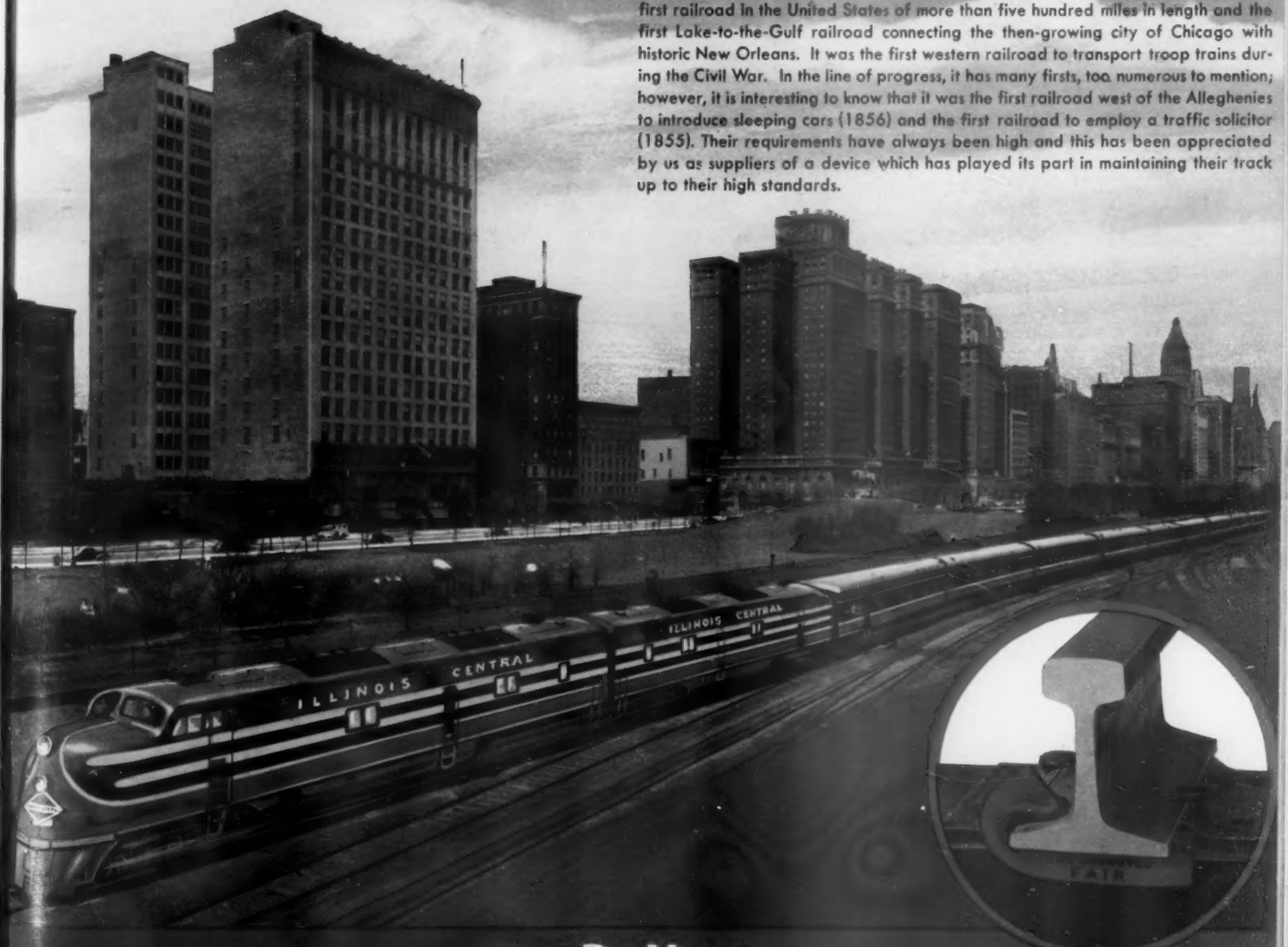
Congratulations

ILLINOIS CENTRAL

ON YOUR 100TH ANNIVERSARY

1851 - 1951

The Illinois Central has always been a progressive railroad. Historically, it was the first railroad in the United States of more than five hundred miles in length and the first Lake-to-the-Gulf railroad connecting the then-growing city of Chicago with historic New Orleans. It was the first western railroad to transport troop trains during the Civil War. In the line of progress, it has many firsts, too numerous to mention; however, it is interesting to know that it was the first railroad west of the Alleghenies to introduce sleeping cars (1856) and the first railroad to employ a traffic solicitor (1855). Their requirements have always been high and this has been appreciated by us as suppliers of a device which has played its part in maintaining their track up to their high standards.



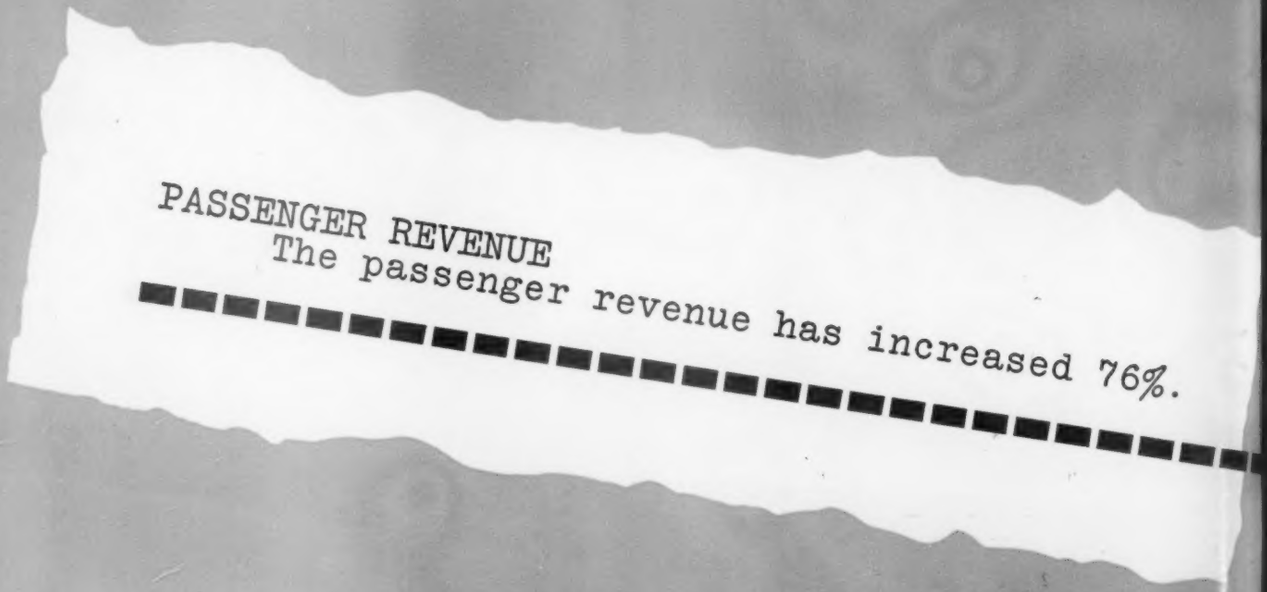
THE P. & M. CO.

CHICAGO • NEW YORK • DENVER • WASHINGTON • ST. LOUIS • CLEVELAND • ST. PAUL • BOSTON • SAN FRANCISCO

MEXICO D. F.

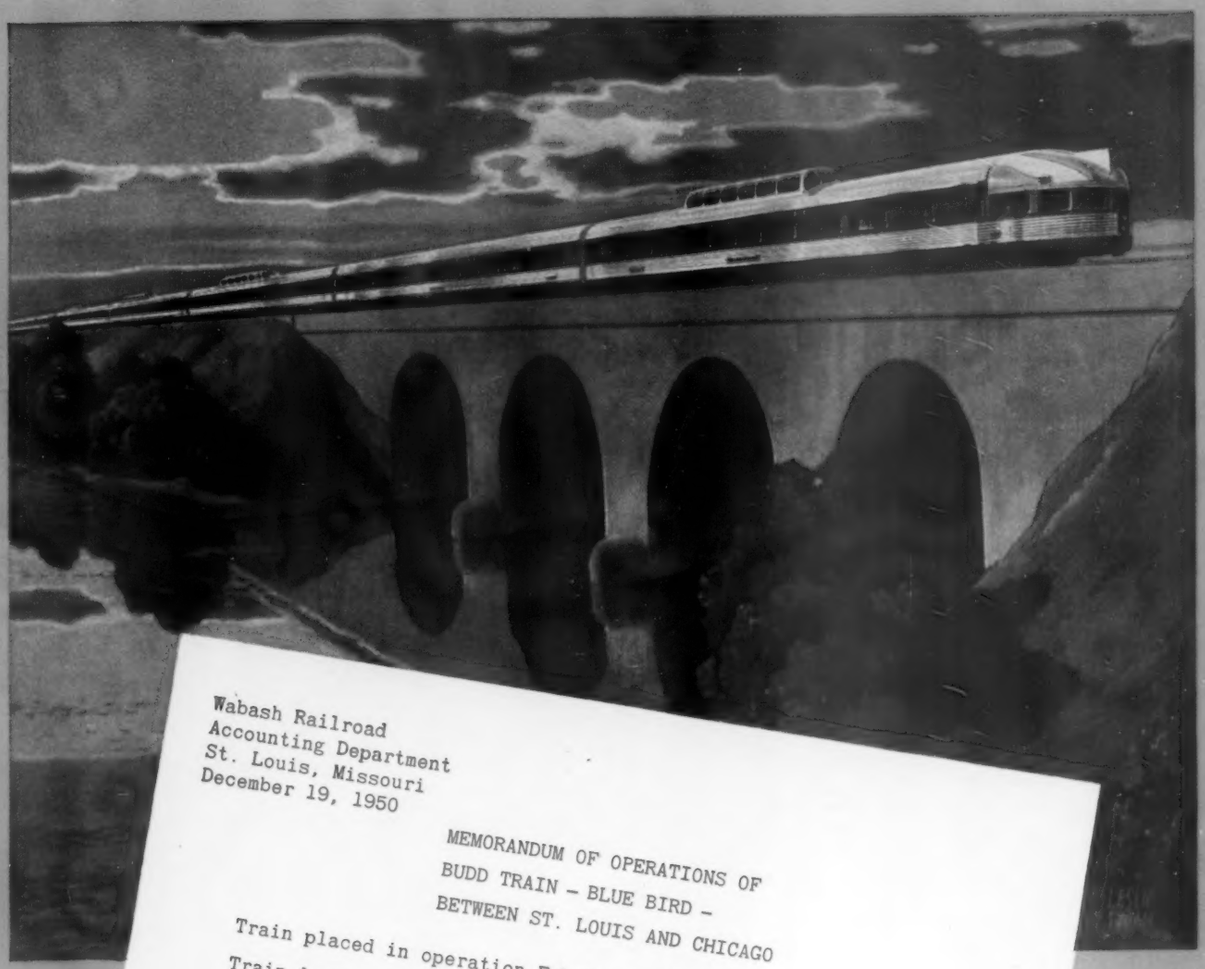
Traffic's Terrific!

Since the Wabash "Blue Bird" became a Budd-built train



Budd

THE BUDD COMPANY, PHILADELPHIA 32



Wabash Railroad
Accounting Department
St. Louis, Missouri
December 19, 1950

MEMORANDUM OF OPERATIONS OF
BUDD TRAIN – BLUE BIRD –
BETWEEN ST. LOUIS AND CHICAGO

Train placed in operation February 26, 1950.

Train leaves St. Louis Union Station as No. 24 (Blue Bird) at 8:55 a.m. – makes 3 regular stops and 4 provisional stops arriving at Chicago Dearborn Station at 2:05 p.m., 295 miles in 5 hours and 10 minutes.
At Chicago it is turned and lightly serviced – leaving Chicago at 4:45 p.m. as No. 21 (Blue Bird) – makes 3 scheduled stops and 4 provisional stops, arriving at St. Louis Union Station at 10:10 p.m., 295 miles in 5 hours and 25 minutes.
Total mileage per day – 590 miles.
Annual train miles per year – 215,350.
This train replaced two sets of standard equipment with steam power operated daily in each direction.

AVAILABILITY

For the seven months the car equipment of this train has been in operation, it has an availability record of 99.64% – one car only having missed a trip of 590 miles because its skirt was damaged by a baggage truck on leaving terminal.

PASSENGERS CARRIED

The number of passengers carried has increased 70% over the number carried by the same train with standard equipment one year ago.

PASSENGER REVENUE

The passenger revenue has increased 76%.

REVENUE AND EXPENSE PER TRAIN MILE

Servicing and repair costs are as yet not fully determinable. Cleaning costs for the new Budd equipment are somewhat higher than for standard equipment because of the additional glass and floor area of the four dome cars. On the other hand, because the new Blue Bird replaces two sets of equipment much of the servicing formerly experienced at Chicago is eliminated. The substitution of Diesel power contributes to the reduced cost of operation.

Important Information FOR RAILWAY EXECUTIVES

WHO WANT WEED-FREE TRACK AT REASONABLE COSTS...

Are you satisfied with temporary top-kill with no reduction in yearly costs?

Or do you want—

Cumulative control with clean track at higher initial cost but with diminishing annual expenditures?

The Choice is Yours!

OUT OF ITS EXTENSIVE BACKGROUND in handling railroad weed control problems, General Chemical has developed a *modern* method of control which now enables a road to achieve clean track immediately with continuous reduction in root growth . . . and at *diminishing costs!*

THESE RESULTS are obtained through a two or three year program, following a schedule *especially tailored* to overcome each road's particular weed problems.

IN RESPONSE TO the dozens of requests for a detailed definition of this program . . . how it works . . . and what it does, a descriptive portfolio, "A Policy Decision in Railroad Weed Control", has just been published. Outlining General's proven method of treatment, it supplies you with answers to the above questions. A supplement contains full color illustrations showing the clean track obtained for several leading roads through the use of this program.

IF YOU feel a copy of this portfolio would be helpful in making your policy decisions in railway weed control, *please write today on your business letterhead to:*

GENERAL CHEMICAL WEED CONTROL

WEED KILLER DEPARTMENT

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

Good Neighbor to Mid-America for 100 Years

The birthday greetings that please us most are those that call us "good neighbor" . . . two words saying we are at home in all communities along the Illinois Central.

Time was when we could count neighbors on our fingers. But as our lines opened new lands, new families followed. They traveled far, from Eastern states and abroad, to the lonely Midwest prairies; many earned a stake for farm or store by laying Illinois Central rails.

As our railroad spread south to the Gulf, west to the Missouri River and southeast to Birmingham, we found more good friends to serve and work with, many far beyond our railheads. Joining with old friends and new, we helped to cement the Middle-North and the Middle-South into the land called Mid-America.

For 100 years the Illinois Central has made Mid-America's life its own . . . carrying the products of farm, mine and factory to market and bringing back the needs of daily life.

But the Illinois Central believes, and always has, in looking beyond transportation. For the well-being of every farm, factory, mine, forest and person is the root from which our own well-being springs. For example—

. . . The Illinois Central opened the first shaft coal mine in Illinois, helped make coal the power around which industrial Mid-America has grown.

. . . The Illinois Central carried the first refrigerated rail-shipment of perishable fruit, helped launch a new agricultural development that puts fresh fruits on every table the year 'round.

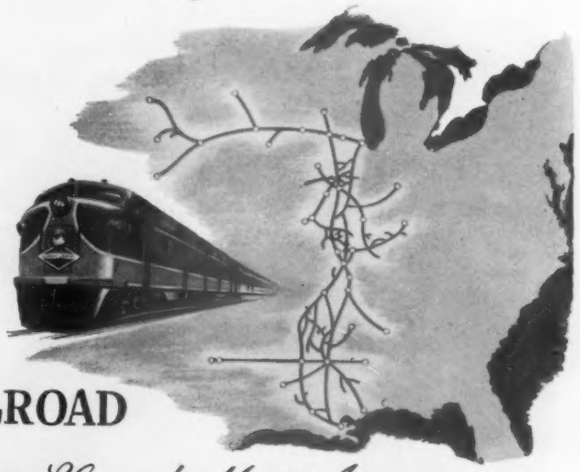
. . . Today the Illinois Central helps farmers grow better crops and raise finer livestock. And each year it seeks sites for new industries to help swell community payrolls.

Through all these years the Illinois Central has worked to keep itself sturdy and progressive. It has created a strong financial foundation—to pave the way for needed improvements and to meet and handle emergencies as they arise.

Faith in Mid-America started the Illinois Central on its way a century ago. That faith has continued, unquenched. Today we believe that Mid-America is the nation's new frontier of opportunity . . . for the individual, for industry and for commerce.

With this future before us, we are determined that the Illinois Central shall continue *to earn*, by useful work and constant helpfulness, the honor of being "good neighbor" to all Mid-America.

W. J. Johnston President



ILLINOIS CENTRAL RAILROAD

For 100 Years - the Main Line of Mid-America

MORTON congratulates ILLINOIS CENTRAL

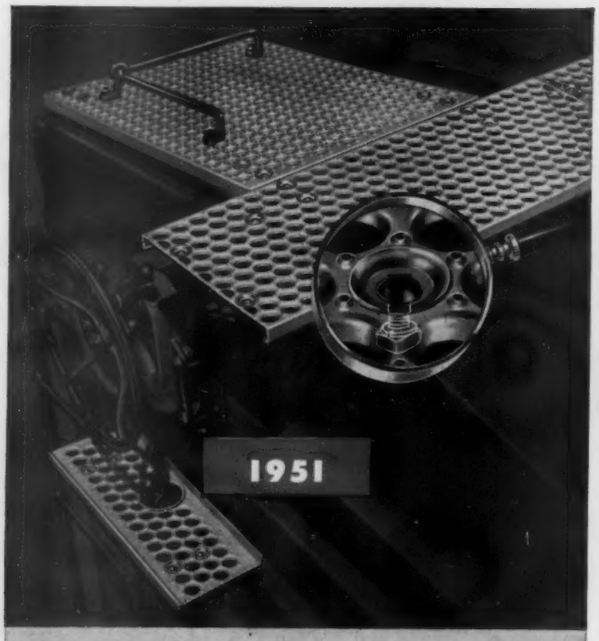
on its century of progress

THE Illinois Central Railroad marks an important milestone in 1951. For this year Illinois Central completes a century of service to the vast territory lying between the Great Lakes and the Gulf of Mexico. During these hundred years this great railroad has recorded notable achievements in railroading—many in the field of safety.

We at Morton are proud to have shared in this to some degree by furnishing the Illinois Central with safe OPEN-GRIP running boards and brake steps for freight cars. We are proud, too, to be numbered among the hundred leading suppliers of this progressive railroad.

1851 • 1951

GONE ARE THE DAYS..... when trainmen found perilous footing on freight-car tops. In the early days of the Illinois Central, slick, rounded box-car roofs constantly invited accidents. Morton OPEN-GRIP running boards have changed all that.



OPEN-GRIP is die-formed in many sizes and shapes from a single piece of copper-bearing steel, hot-dip galvanized. It has no seams, joints, slots, or welds. Cup-and-bolt attachment requires neither special tools nor precision work for permanent application.

For All-Weather Safety The Illinois Central Uses MORTON OPEN-GRIP RUNNING BOARDS

The Illinois Central, along with many other railroads, specifies MORTON OPEN-GRIP running boards because they're engineered for safety, easy application and long life.

OPEN-GRIP's self-cleaning design assures freedom from accumulations of snow, ice, mud and corrosives. The large, rounded-edge holes form a welcome emergency hand grip.

Secure footing, unaffected by frost, is provided by Kass Safety Buttons which resist slippage in all directions and are kept sharp by wear. The average foot is supported by seventeen or more of these buttons, giving a trainman the feeling of confidence he likes.

Whether you're planning new equipment or reconditioning the old—it will pay you to get Morton OPEN-GRIP. Write for specification sheets, details, and cost information.

MORTON
MANUFACTURING COMPANY
5125 West Lake Street, Chicago 44, Illinois

SALES OFFICES:

New York, St. Louis, St. Paul, Washington, D. C.
San Francisco, Louisville, Montreal

Management and Labor BOTH agree that the High Cost of EYE ACCIDENTS Can be Cut—NOW!

Eye Accidents Cost $160,000,000 in LOST MAN HOURS*

In these days of accelerated production, what to do about other high costs may be debatable, but the wisdom of preventing eye accidents and their high costs is clearly apparent by simple arithmetic. A goggle representing an investment of about $2.30 can prevent a four figure claim . . . keep an experienced man on the job instead of a novice . . . protect the valuable machine he works on (as well as the man) . . . keep volume up and rejects down. Add the direct savings in medical care, first aid, and the indirect benefits of improved morale, and the case for an AO Eye Protection Program is overwhelming — particularly when the program can pay for itself in less than 6 months time! Ask your nearest AO Safety Representative for complete details.

*ESTIMATE. Does not include average cost of compensation which even for the low cost year of 1938 was $328.00.

American Optical COMPANY
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

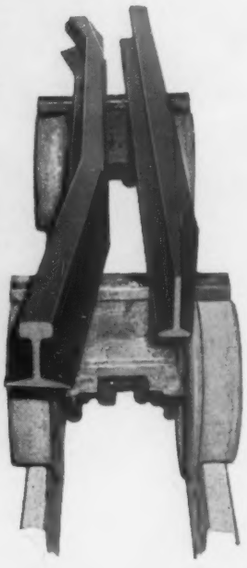
WHAT'S THE BEST WAY

. . . to fabricate rigid frogs?

Heating Wing Rail for Bending Operation

Cutting Wing Rail After Bending

Cutting Long Point Rail



Both Rails After Bending, Cutting and Finishing

Use the Oxyacetylene flame processes!

Airco Railroad Service Representatives recently supervised the fabrication of rigid frogs in a large railroad shop. They observed costs and results. On the basis of this experience, they recommend:

For Bending – heat both the wing rail and the long point rail in required places with the oxyacetylene flame. This simplifies the actual bending operation – cuts time and cost.

For Cutting – make the two cuts on ball and the two on the base of long point rail with the Airco No. 10 Radiagraph (portable, oxyacetylene gas cutting machine) and using the same machine make the necessary cut on the wing rail.

This type of cutting operation was found to be far more economical and less time consuming than doing the same job by other means.

For more information about the above job and other oxyacetylene flame or arc welding applications, write your nearest Airco office.

Costs Come Down Under the Airco Plan

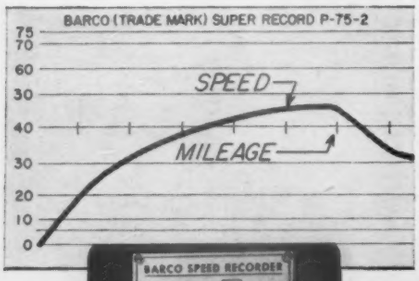
AIRCO

AIR REDUCTION

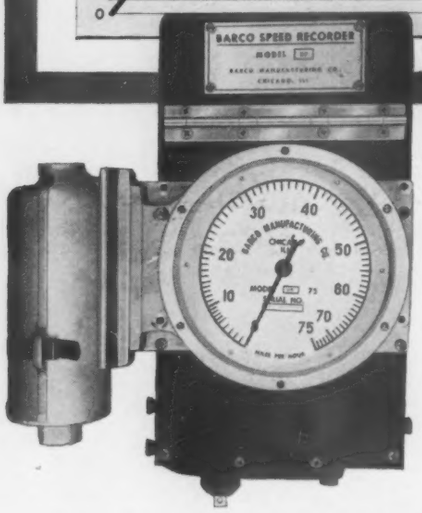
AIR REDUCTION SALES COMPANY • AIR REDUCTION MAGNOLIA COMPANY
AIR REDUCTION PACIFIC COMPANY
REPRESENTED INTERNATIONALLY BY AIRCO COMPANY INTERNATIONAL
Divisions of Air Reduction Company, Incorporated
Offices in Principal Cities

BARCO SPEED RECORDERS

—the *Facts* when you need them!



"How fast was it going?"..."Where did it stop?"...."How did the run vary from schedule?"... accurate, indisputable answers to these and many other questions are yours *in permanent record form* when your motive power is equipped with BARCO SPEED RECORDERS.



Model DP-75 Speed Recorder. This new model is now being supplied in increasing quantities for installation on new Diesel-Electric Freight Locomotives. It indicates and records speeds from 0 to 75 MPH. Mileage and location can be determined from the record tape.

Model SER Switch Engine Recorder. Provides 24-hour daily chart of time standing, time moving, speed, distance traveled, and total mileage. *Helps you get the most out of your investment!*

Accuracy, Dependability!

PROVED BY MILLIONS OF MILES OF SERVICE

The accuracy and dependability of BARCO SPEED RECORDERS are unquestioned. A typical user* reports accuracy within 2% at 100 MPH after a million miles of service! This is the kind of performance you want and one reason why you should INSIST ON GETTING BARCO SPEED RECORDERS.

BARCO "SUPER-RECORD" RECORDING TAPES, CHARTS

Specially designed to match the precision of the instruments. Produced under rigid quality controls to assure perfect recording, freedom from operational difficulties. Simple, easy to use. Tapes available in five speed ranges: 60, 75, 90, 100, or 120 MPH; mileages to 2400.

INHERENT MECHANICAL ACCURACY

Only BARCO gives you the accuracy and dependability of ALL-MECHANICAL construction. A tested and proven design, manufactured with precision tooling. Easy to install; simple to maintain.

RECORDERS FOR EVERY TYPE OF LOCOMOTIVE

The BARCO line is complete! Records of every locomotive operation—for every type of engine in service or being built for railroads today. *Ask for information.* BARCO MANUFACTURING CO., 1800 C Winnemac Ave., Chicago 40, Ill.

*Name on request.

Congratulations to ILLINOIS CENTRAL *100th Anniversary*

BARCO RECORDERS

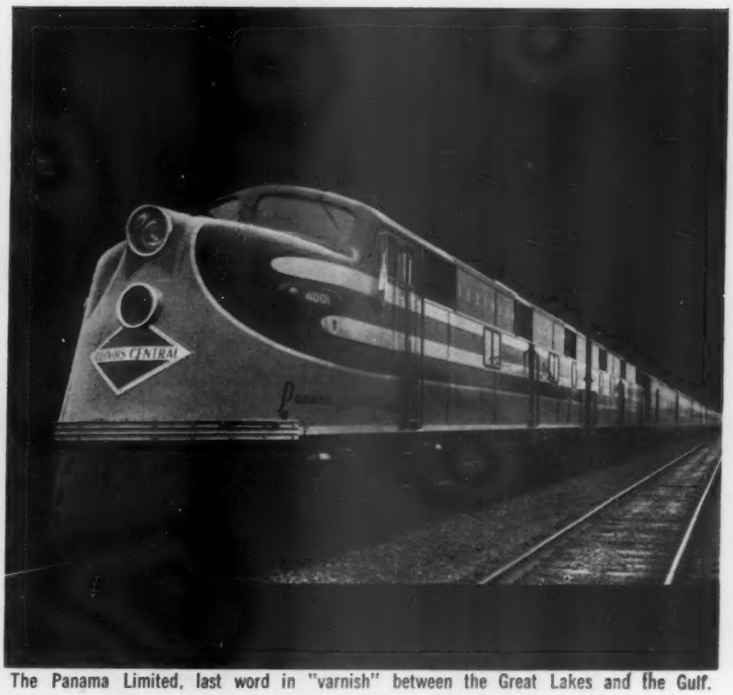
For Diesel and Steam
Passenger, Freight, and Switch Engines

FREE ENTERPRISE—*THE CORNERSTONE OF AMERICAN PROSPERITY*

WELCOME

ILLINOIS CENTRAL

TO THE CENTURY CLUB



The Panama Limited, last word in "varnish" between the Great Lakes and the Gulf.

A salute to the Illinois Central from the makers of

PENNSALT MAINTENANCE CLEANERS

This year marks the centennial celebration of the Main Line of Mid-America. Pennsalt, itself just turned 100, congratulates the Illinois Central on 100 years of successful railroading.

Progressive railroading, too! Progressive in fast, dependable freight service, such as that rendered Pennsalt at its new Calvert City, Ky., plant. Progressive in passenger service, typified by the all-Pullman Panama Limited.

Progressive in maintenance, too, where Pennsalt cleaning compounds have been selected for cleaning steam locomotive frames, trucks and running gear . . . as well as Diesel engine blocks and trucks.

Illinois Central has found that Pennsalt Cleaners give fast, efficient cleaning on a wide variety of parts. Solutions last longer, and, because Pennsalt alkaline cleaners are virtually anhydrous, they can be used in lower concentrations.

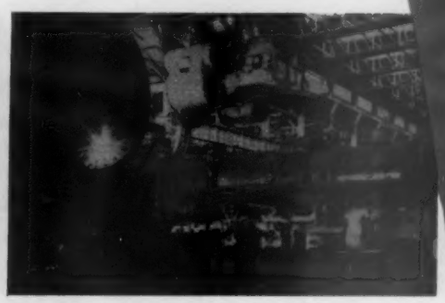
Not only on the Illinois Central, but on many other major roads Pennsalt Cleaners are delivering that extra "something" in cleaning efficiency. Your local Pennsalt representative will be glad to study your maintenance cleaning operations, and help set up tests to prove the advantages of Pennsalt Cleaners. Write: Pennsylvania Salt Manufacturing Company, Philadelphia 7, Pa.

PENN SALT

Railroad Maintenan Cleaners

PROGRESSIVE CHEMISTRY FOR OVER A CENTURY

One of the Illinois Central fast freights which speed merchandise from the head to the toe of America.



Shops at Paducah, Ky., where Pennsalt Cleaners give fast efficient removal of soil, keep locomotives on the high iron.

Photographs courtesy Illinois Central Railroad

"Special"

LUBRICATED BY SINCLAIR

Here is the nation's speediest stock train — the Union Pacific's "Daylight Livestock Special." In it, cows, hogs, and sheep can ride in comfort, shock-cushioned and gliding along on roller-bearings.

These 80-car trains operate from Ogden to Los Angeles, often traveling 60 m.p.h., eliminating the stop at Las Vegas for feed, water and rest. Thus, livestock now reach California in less time and in good condition.

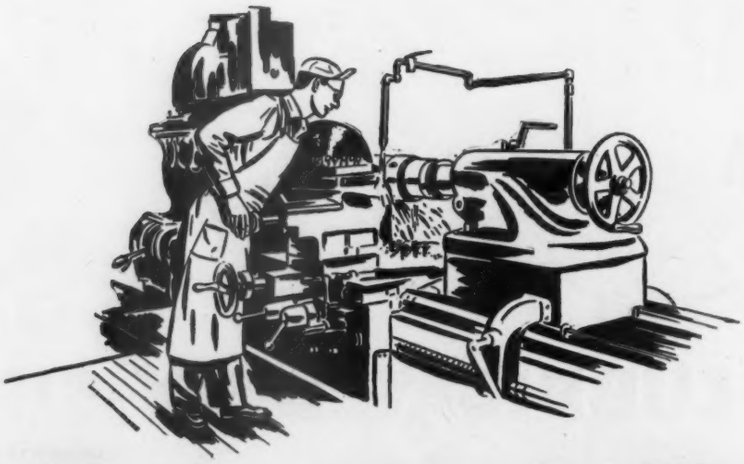
The multiple-unit Diesels that power these Daylight Livestock Specials use Sinclair Gascon Oil as do most of the locomotives of the Union Pacific.

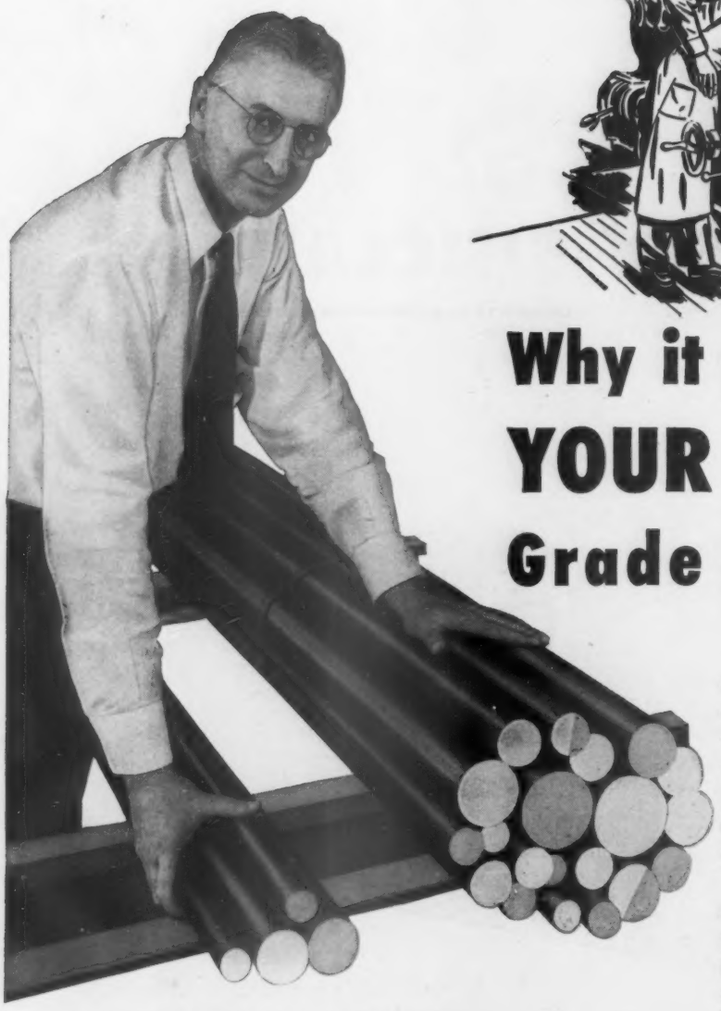
SINCLAIR GASCON®— Incomparable for Diesel lubrication.

Today, more than 60 U. S. railroads are using these fine lubricants, in locomotives pulling long freights and celebrated streamliners. Their service record over the years is unsurpassed. For clean engines and the most effective protection for *your* Diesels, use Sinclair Gascon Oils.

LUBRICANTS

Sinclair Refining Company, Railway Sales • New York • Chicago • St. Louis • Houston





Why it pays to simplify YOUR ALLOY STEEL Grade Requirements

A comparatively few alloy steels of the same carbon content are usually all that are needed to quench out to a full range of sizes. In most cases there is little or no advantage in using a large variety of alloy steels, except where such special properties as heat-resistance, corrosion-resistance, or impact-resistance at low temperatures are required.

This does not necessarily mean that we recommend the use of a few high-priced, general-purpose steels to fill all of your needs. We do suggest, however, that it will be to your advantage to make periodic studies of the steels you use to determine where you can eliminate superfluous grades so as to reduce your cost.

Our metallurgists will be glad to give you impartial advice on how to simplify or reduce the number of grades of alloy steel that you may now be using.

We manufacture and sell the entire range of AISI grades and special-analysis steels, as well as all of the standard carbon steels.

When you simplify alloy grade requirements

1. You can place orders less frequently for larger quantities of a particular grade.
2. You will usually be able to get faster delivery service.
3. You can make worthwhile savings in quantity extras.
4. Your inventories will be lower, with less money tied up in slow-moving grades.
5. You will save on the cost of overhead, handling and record-keeping.
6. You will reduce possibilities for errors in warehouse and shop.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation.

BETHLEHEM ALLOY STEELS

BETHLEHEM STEEL

Congratulations to ILLINOIS CENTRAL

Main Line of Mid-America

The road that links the Great Lakes and the Gulf of Mexico—the road that through the past hundred years has been a dynamic force in serving and developing Mid-America.

We are proud to have been chosen by such a road to supply them with some of our products for the past thirty years of their century of service.

IMPROVED HIPOWERS IMPROVE TRACK

THE NATIONAL LOCK WASHER COMPANY, NEWARK 5, N. J., U. S. A.

A COMPLETE LINE OF RAILWAY SPRING WASHERS

Congratulations

"I.C."

I.C. a pioneering 100-year-old railroad!

100 years ago the Illinois Central Railroad Company undertook a formidable task — the building of a pioneer railroad across the wild and undeveloped regions between Chicago and Cairo, Illinois.

40 years later in 1890 the "IC" pioneered in using metal car roofs made by the firm that is now Standard Railway Equipment Manufacturing Company.

We hope to pioneer with "IC" in the next 100 years.

Standard

RAILWAY EQUIPMENT MANUFACTURING COMPANY

310 S. Michigan Avenue, Chicago 4 • 247 Park Avenue, New York 17

The World's Largest Fabricator of Railway Car Specialties

Salute to

THOMAS A. EDISON, INCORPORATED salutes the Illinois Central and its growth in mileage and in service to millions of people.

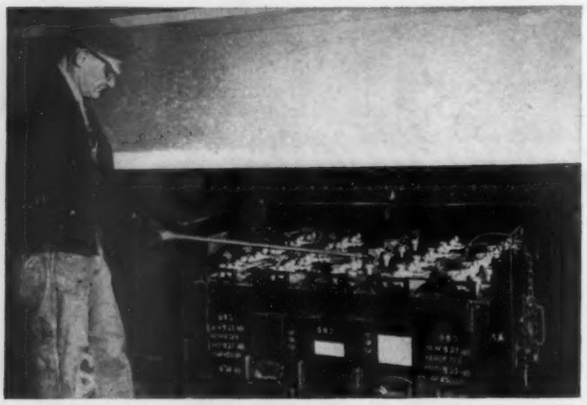
Its original or "charter" line, organized in 1850 and completed in 1856, extended 705.5 miles from Cairo to the Mississippi at East Dubuque and to Chicago.

Today, with its nearly 6,600 miles of line and a total of more than 11,000 track miles, it directly serves some 2,200 communities in 14 Midwest and Southern states, a territory which is populated by about half the people of the United States.

Casey Jones was one of its engineers, Abraham Lincoln one of its attorneys. It is an organization of 40,000 men and women devoted to providing safe, courteous and efficient railway service.

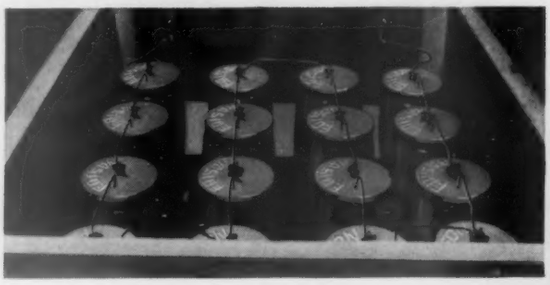
Our company is proud to have assisted the Illinois Central, during the second half of its first 100 years, in applying electric power to lighting and other conveniences in passenger cars and to signaling equipment which contributes to safety and efficiency of train operation.

An Edison Storage Battery on an Illinois Central head-end car new in 1912, photographed in 1950.

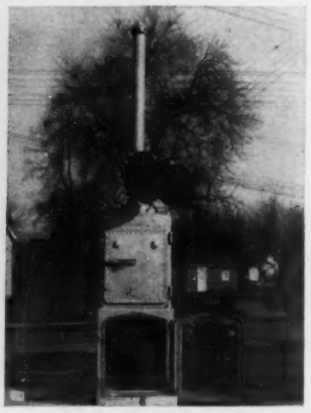


An Edison Storage Battery assembled in roll-out cradle on a postwar de luxe Illinois Central coach.

Left—New Edison 1000-a.h. Carbonaire switch lamp battery being field tested by the Illinois Central.



Thousands of Edison Copper-oxide Primary Cells, like these, are used by the Illinois Central for direct or stand-by operation of vital signal services.



Right—The Edison Storage Cells operating this Illinois Central highway crossing signal are 24 years old.

THOMAS A. EDISON, INCORPORATED

Storage Battery Division — WEST ORANGE, N. J.

•

Primary Battery Division — BLOOMFIELD, N. J.

Looking ahead into another century with ILLINOIS CENTRAL

Hyatt salutes the Illinois Central upon its first century of progress.

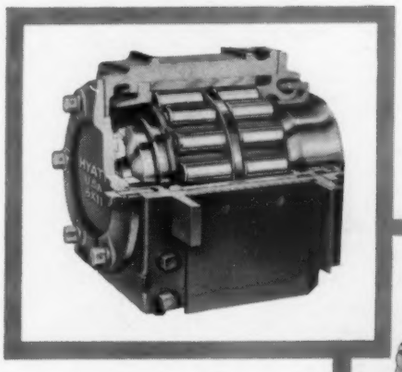
A hundred enterprising and adventurous years mark the development of the Illinois Central into a great modern railroad.

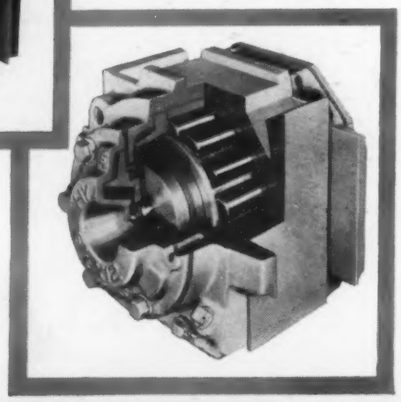
Constantly improving facilities, service and equipment, this road continues to provide more and better service to the growing area it serves.

Hyatt is proud to have had a part in Illinois Central's mechanical progress by supplying roller bearing journal boxes for their passenger cars and diesel locomotives.

Looking ahead into another century of progress with the Illinois Central, Hyatt pledges its help in meeting the demands of the future. Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.

Hyatt Roller Bearing Journal Box for Passenger Cars





Hyatt Roller Bearing Journal Box for Diesel Locomotives

HYATT ROLLER BEARING JOURNAL BOXES


FOR 100 YEARS
1851
ILLINOIS CENTRA
MAIN LINE OF MID-AM

Milestone of Progress

FOR THE MAIN LINE OF MID-AMERICA

We humbly salute the Illinois Central and its outstanding record of 100 years of service and progress. One of America's great railroads, the Illinois Central has been a true pioneer in every sense of the word. Its contributions to our country's progress are many...in agriculture, industry, commerce, human relations.

We can be confident that in the next hundred years this pioneering spirit will further distinguish the Illinois Central as the "Main Line of Mid-America."

AMERICAN CAR AND FOUNDRY COMPANY

New York · Chicago · St. Louis · Philadelphia · Cleveland · Washington · Pittsburgh · San Francisco

helping along the way of the ILLINOIS CENTRAL

Dearborn takes pleasure in joining with thousands of others to commemorate the centennial anniversary of the Illinois Central. Dearborn is also proud of its many years of service to this outstanding railroad.

Dearborn products and services . . . available to all railroads . . . include boiler feed water treatment—Diesel cooling water treatment—Dearborn cleaners—de-ionizing systems—NO-OX-ID rust preventives.

To protect your valuable equipment . . . eliminate needless expense . . . keep wheels a'rolling, look to Dearborn. A Dearborn representative will gladly discuss your problems with you.

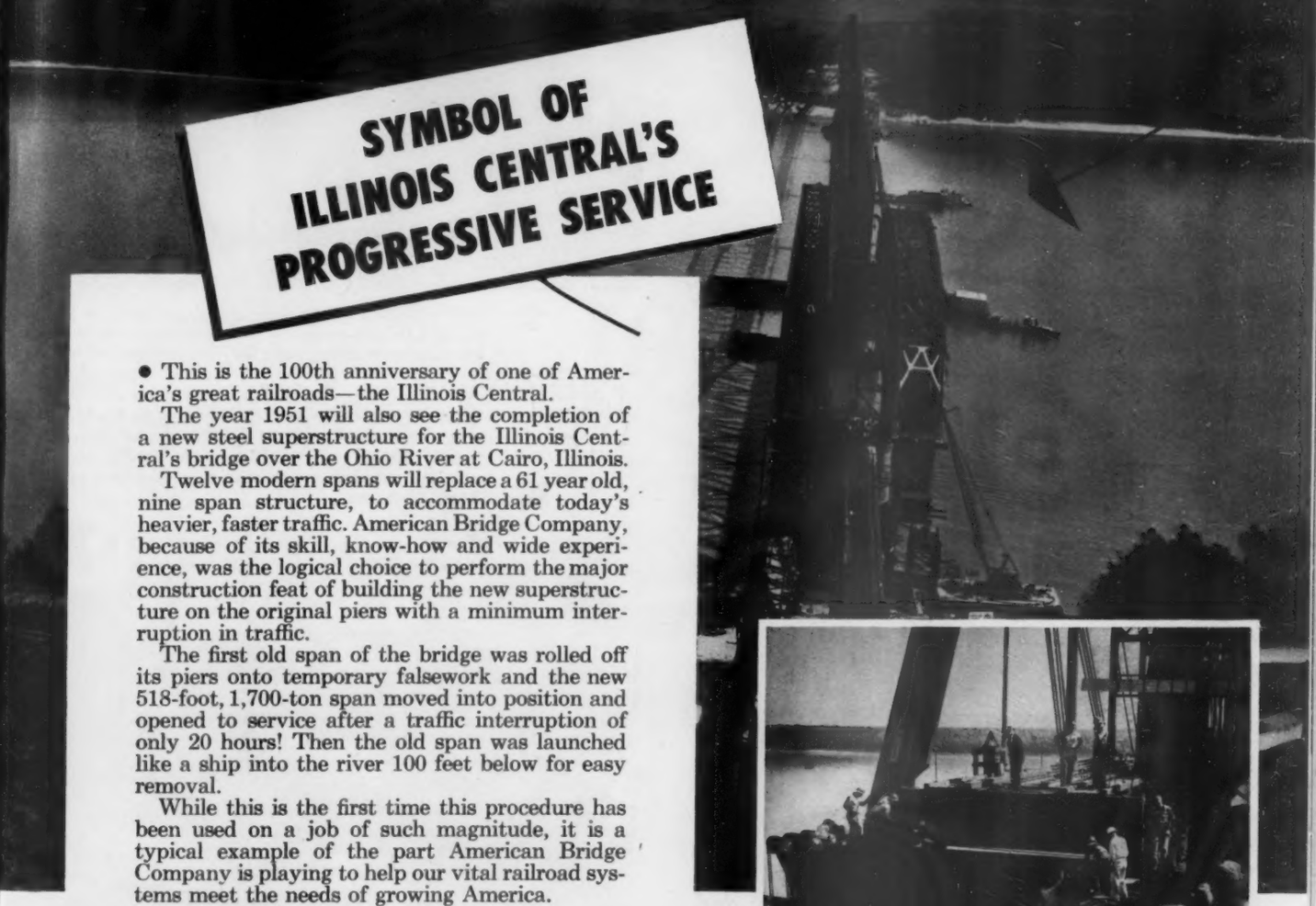
DEARBORN CHEMICAL COMPANY
310 S. Michigan Ave. • Chicago 4, Ill.

Dearborn
TRADE MARK REGISTERED
THE LEADER IN WATER TREATMENT AND RUST PREVENTIVES

***Stars mark the many points along the Illinois Central system where Dearborn products and services are at work.**

BRIDGE MODERNIZATION AT CAIRO

SYMBOL OF ILLINOIS CENTRAL'S PROGRESSIVE SERVICE



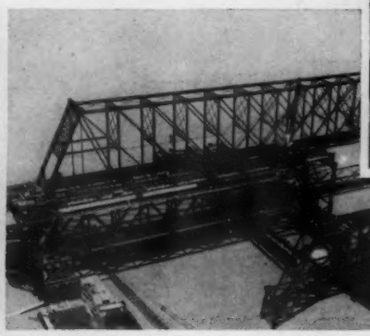
• This is the 100th anniversary of one of America's great railroads—the Illinois Central.

The year 1951 will also see the completion of a new steel superstructure for the Illinois Central's bridge over the Ohio River at Cairo, Illinois.

Twelve modern spans will replace a 61 year old, nine span structure, to accommodate today's heavier, faster traffic. American Bridge Company, because of its skill, know-how and wide experience, was the logical choice to perform the major construction feat of building the new superstructure on the original piers with a minimum interruption in traffic.

The first old span of the bridge was rolled off its piers onto temporary falsework and the new 518-foot, 1,700-ton span moved into position and opened to service after a traffic interruption of only 20 hours! Then the old span was launched like a ship into the river 100 feet below for easy removal.

While this is the first time this procedure has been used on a job of such magnitude, it is a typical example of the part American Bridge Company is playing to help our vital railroad systems meet the needs of growing America.



FOOT BY FOOT the old span, 60-ft. high and weighing 1,100 tons, is rolled over to rest on launching sleds atop temporary falsework. From this position it was launched into the Ohio 100 ft. below. **LEFT:** Falsework span No. 2 erected complete and jacked to elevation prior to floating. FAR LEFT: New span rolls into position four hours after movement started.

INTERESTING FACTS

- 6 spans, 197′ 7″
- 4 spans, 400′ 11½″
- 2 spans, 518′ 11″
- Bridge was single track, through truss. Steel used, 10,000 tons.
- Erecting procedure: Illinois Central R. R. and American Bridge Company.
- Consulting Engineers: Modjeski and Masters.

AVAILABLE NOW! *For showing in churches, schools, clubs and industries, the new sound and color motion picture—BUILDING FOR THE NATIONS—a candid, factual photographic record in full color of the highlights of the fabrication and erection of the United Nations' Secretariat Building in New York City.*

AMERICAN BRIDGE COMPANY

General Offices: Frick Building, Pittsburgh, Pa.

Contracting Offices in: AMBRIDGE · BALTIMORE · BOSTON · CHICAGO · CINCINNATI · CLEVELAND · DENVER · DETROIT · DULUTH · ELMIRA · GARY · MINNEAPOLIS NEW YORK · PHILADELPHIA · PITTSBURGH · PORTLAND, ORE. · ST. LOUIS · SAN FRANCISCO · TRENTON

UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS TRADE MARK

AMERICAN BRIDGE

UNITED STATES STEEL

CATERPILLAR

REG. U. S. PAT. OFF.

RAILROAD DIESELS

power twenty-four 44- and 30-tonners along the "Route of the Rockets"

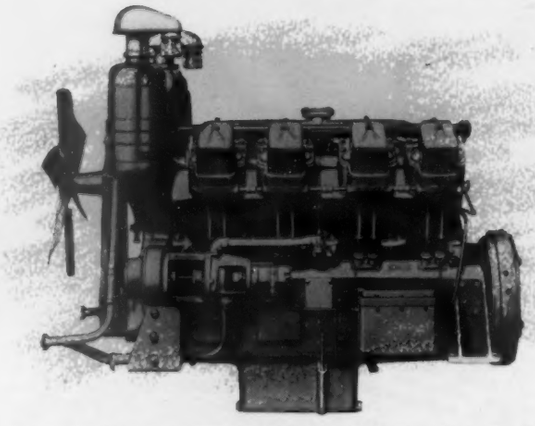
DAVENPORT—Making up passenger trains at Des Moines, this 44-tonner is one of 19 Davenport Besler locomotives working along the "Route of the Rockets."

Rock Island

WHITCOMB—One of the Rock Island's five Whitcomb 44-tonners powered by "Caterpillar" Diesels. Speedy handling of switching chores results in economical, efficient service with this 44-tonner at El Reno, Oklahoma.

Wide acceptance and *repeated purchases* are unbeatable evidence of merit in a locomotive Diesel. Over the years "Caterpillar" Railroad Diesels have been the repeated choice of the Rock Island for its 44- and 30-ton switchers. And this isn't just an isolated case. It has numerous parallels that reflect an acceptance extending over the railroad networks of almost every major road. In fact, *more than 90% of the 44-tonners operating on Class I, II and III railroads throughout the United States are "Caterpillar"-powered.*

CATERPILLAR, PEORIA, ILLINOIS



The "Cat" D17000 Railroad Diesel (200 HP. for railroad service)—favorite for the 44-tonners and mechanical-drive 30-tonners. Note its simplicity, its compactness, its convenient connections for exhaust, fuel, and jacket water—all significant of ready accessibility and easy maintenance. High availability and long life are being proved by hundreds of operating records.

NOTE—"Cat" Diesel Engines are now built in 10 sizes up to 500 maximum horsepower. In multiple installations, they can provide power for locomotives requiring up to 2,000 HP.

WHEREVER YOU USE WOOD..

IN FRESH WATER, many preservatives leach out of wood. BARRETT* Coal-Tar Creosote resists this leaching action. Being only negligibly soluble in water, it is the preferred preservative for use on submerged wood structures, or those exposed to the powerful action of rapidly flowing water.

IN THE NORTH, poles must resist the tremendous weight of frequent sleet storms. Avoid preservatives which *weaken* the wood. BARRETT Coal-Tar Creosote allows poles to retain their maximum strength, and helps to keep the poles at their best and hold the lines aloft.

IN THE SOUTH, prolonged high temperatures cause light-bodied preservatives to leach and evaporate from the wood, thus exposing the wood to termite attack and decay. BARRETT Coal-Tar Creosote, heavier bodied and of lower volatility, prevents this condition. It stays in the wood longer under all conditions—doesn't "run out" on the job.

IN THE DESERT, crossties broom, shatter and split from extreme dryness and heat. Solutions made with BARRETT Coal-Tar Creosote retard this, and also reduce mechanical wear of crossties through their lubricating action on the wood fibers. In poles, heavy treatment with BARRETT Coal-Tar Creosote substantially reduces checking and splitting.

IN THE SWAMPS, forces of decay are almost at their maximum of destructive power. High moisture content and infection from other decaying wood and debris are ever-present menaces. Poles properly treated with Coal-Tar Creosote have survived under swamp conditions for years.

IN SALT WATER, marine wood-borers give a preservative its severest test. Of hundreds of preservatives that have been tried through the years, *Coal-Tar* Creosote is the only one that has proved consistently effective against teredos, limnoria and other salt-water enemies of wood.

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

Use Barrett* →

*Reg. U. S. Pat. Off.

Only coal-tar creosote wood preservative has been used long enough and widely enough to have proved its effectiveness under all conditions.

COAL TAR CREOSOTE

LOOKING AHEAD with P&H PRODUCTS —for Better Railroad Service

P&H salutes The Illinois Central as it opens its second century of operation.

It has been our privilege to serve this, and many other progressive American railroads, in many ways.

In shops all over the country you see the familiar P&H emblem. In the swift handling of heavy loads . . . and in the fabrication and repair of rolling stock . . . . P&H equipment is contributing to greater efficiency and lower costs.

Along the right of way and around yards, P&H equipment is speeding up construction and handling bulk materials—in hundreds of locations.

In warehouses and terminals, P&H materials handling equipment is taking over more and more important tasks, saving time—and money—in faster handling of shipments.

USE THIS SPECIAL RAILROAD SALES DIVISION

Through close cooperation with American railroads, P&H is familiar with the modern trends in railroad operations. P&H's specialized Railroad Sales Division is ready to look ahead with you—to give you the benefit of its broad experience—to help railroads deliver the most effective service to the public.

P&H

RAILROAD SALES DIVISION
4429 West National Ave.,
Milwaukee 14, Wisconsin

HARNISCHFEGER CORPORATION
MILWAUKEE 14, P&H WISCONSIN, U. S. A.

EXCAVATORS • OVERHEAD CRANES • HOISTS
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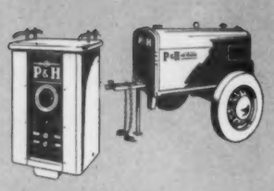
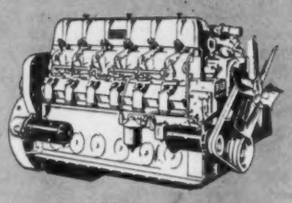
CRAWLER AND TRUCK CRANES • DIESEL ENGINES
CANE LOADERS • PRE-ASSEMBLED HOMES



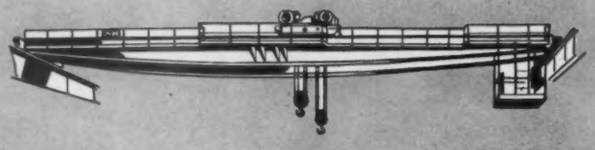
P&H AC and DC Arc Welders

P&H Welding Electrodes

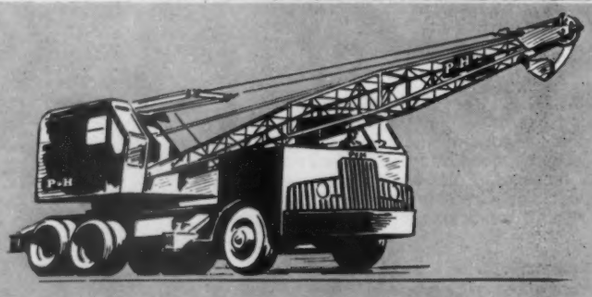
P&H Welding Positioners



P&H Diesel Engines

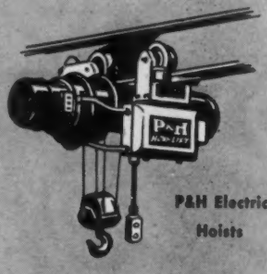


P&H Railroad Shop Cranes



P&H Truck Cranes for Materials Handling

P&H Excavators



P&H Electric Hoists

OUR HATS ARE OFF TO YOU

FOR EXCEPTIONAL

ILLINOIS CENTRAL

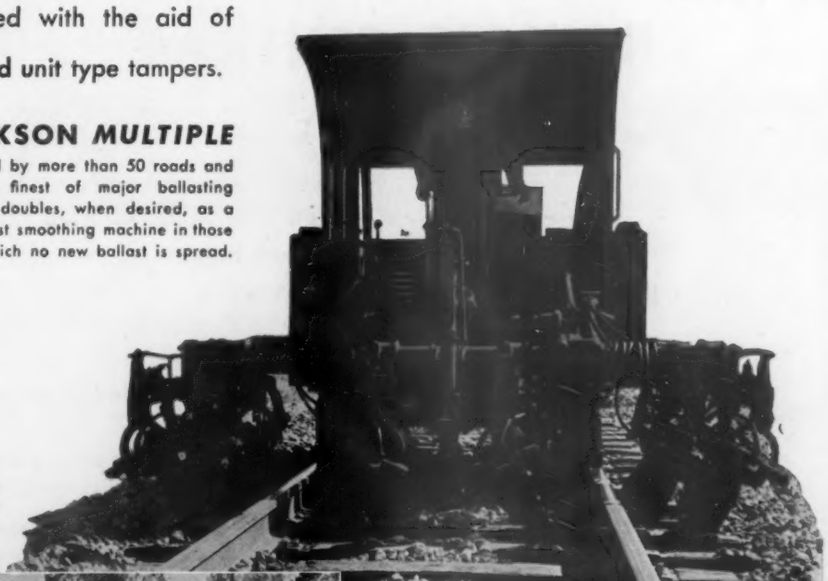
Achievement

On this, your centennial, it is very definitely a great pleasure to congratulate you, one of our oldest customers, on your outstanding achievement — one of the greatest North-South Railway Systems in the nation.

We're mighty proud of the fact that every mile of track, from Chicago to the Gulf of Mexico, is maintained with the aid of JACKSON Multiple and unit type tampers.

The* JACKSON *MULTIPLE

Definitely proved by more than 50 roads and contractors, the finest of major ballasting machines. Also doubles, when desired, as a phenomenally fast smoothing machine in those operations in which no new ballast is spread.



Jackson Manually Guided Tampers greatly multiply the effectiveness of section gangs.

ELECTRIC TAMPER & EQUIPMENT CO.

LUDINGTON, MICHIGAN

Diesel locomotives on the famous "400" fleet use . . .

• Famous as the first long distance mile-a-minute trains, Chicago and North Western Railway System's "400" streamliners connect Chicago and points in Minnesota, Wisconsin, South Dakota and upper Michigan with fast, modern passenger service.

The pace-making schedules maintained by the "400" trains have called for efficient Diesel locomotive operation. To this efficiency STANDARD HD Diesel Oil has contributed clean, effective lubrication. Each of eleven Diesel units on the "400" fleet have completed over 600,000 miles of trouble-free operation on STANDARD HD.

The Chicago and North Western Railway System is one of the more than 60 Railroads that now use STANDARD HD Diesel Oil. This acceptance indicates the ability of STANDARD HD to provide efficient and economical lubrication for all types of Diesel locomotives. Make that your basis for investigating STANDARD HD Diesel Oil.

STANDARD HD
TRADE MARK
Diesel Oil

Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

STANDARD OIL COMPANY (INDIANA) STANDARD

Everybody's Talking....

ABOUT THE 100-YEAR-OLD ILLINOIS CENTRAL

Over the past 100 years, the I. C. has been a major factor in the tremendous growth of Illinois' agriculture, industry and commerce. Thanks to this great railroad, which extends from Chicago to the Gulf, Illinois now enjoys a world-wide market. We proudly salute "The Main Line of Mid-America"—the Illinois Central!

AND RAILROAD PEOPLE ARE TALKING ABOUT THE NEW JORDAN ROAD-MASTER

For year-around roadbed maintenance, nothing can compete with the new Jordan Road-Master. This versatile unit is a combination Spreader-Ditcher-Snowplow . . . designed to solve your toughest roadbed maintenance problems. For complete information and data concerning the new Jordan Road-Master, write today.

O. F. JORDAN COMPANY

WALTER J. RILEY, *Chairman of the Board*

EAST CHICAGO, INDIANA

For First-Time Facts about Passenger Car Braking

DON'T MISS

"POWER TO STOP"

The new sound-color movie that takes you along as brakes are being tested!

● See the new A.S.F. Brake Service Laboratory—first on-track equipment designed for testing passenger brakes exclusively . . . watch breakaway tests being run . . . see comparative tests of clasp and off-the-wheel brakes in high-speed emergency stops.

WE WILL BE PLEASED TO ARRANGE A SHOWING FOR YOU. WRITE: "POWER TO STOP," DEPT. A, AMERICAN STEEL FOUNDRIES, 410 N. MICHIGAN AVE., CHICAGO 11, ILL.

SIMPLEX

UNIT CYLINDER CLASP BRAKES

SAFE, SHORT, SURE STOPS—
IN EVERY KIND OF WEATHER

Burkart Tie Pads ...the Pads that BREATHE* with strength

Saluting the Illinois Central

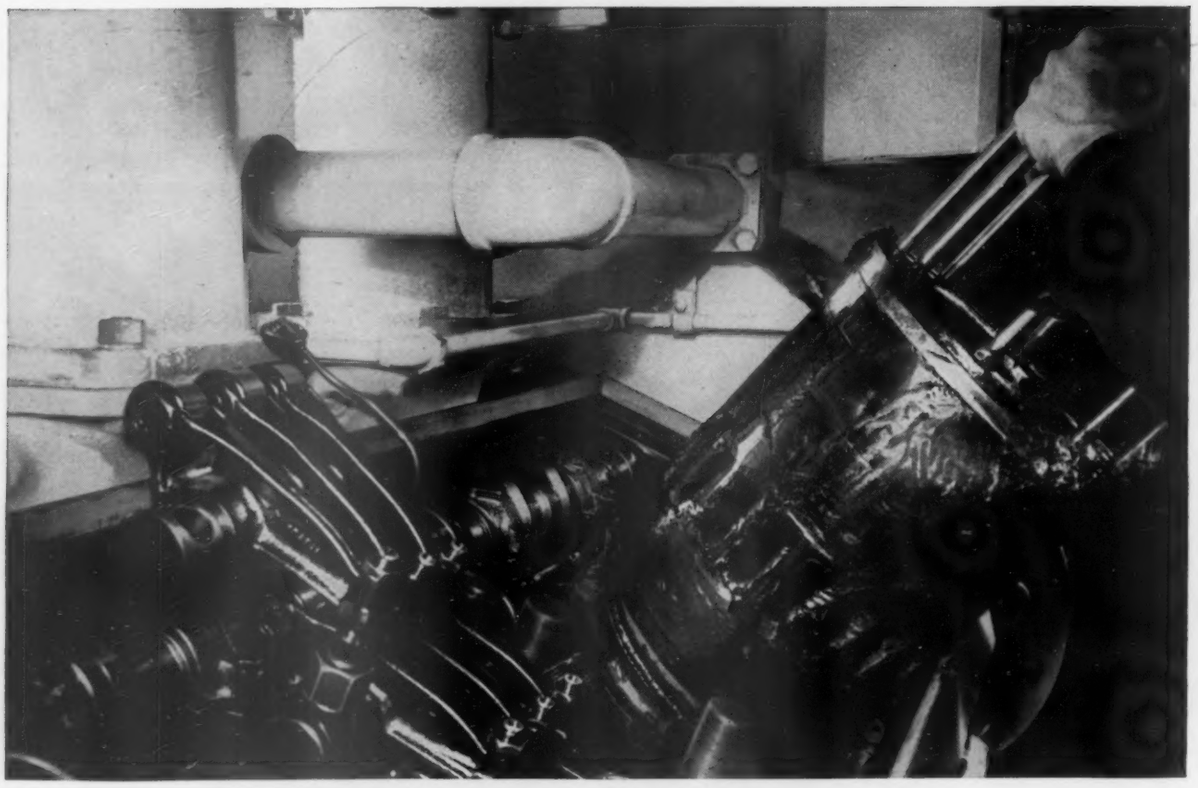
WE join the hundreds of other suppliers whose products serve the Illinois Central in congratulating this great railroad on the completion of its successful first century.

F. BURKART MFG. CO.
Railroad Tie Pad Division
4900 No. 2nd St., St. Louis 7, Mo.

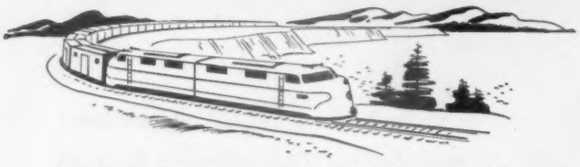
* Because of the patented process used in their manufacture, Burkart Tie Pads will not trap water between pad and tie—they constantly breathe and eliminate moisture without any loss of strength.

Burkart Tie Pads are not affected by extremes of temperature, oxidation, sunlight, brine, oils, acids, most solvents, alkali, grit, insects, vermin, or fungus.

These tough and permanently resilient pads eliminate plate cutting, spike lifting, spread rails, and battered rail ends.



When There's No Time For Down Time...



IT'S TIME FOR ALLOY STEELS

● With stepped-up schedules causing extra strain and extra wear, Diesel working parts need to be extra strong, extra wear-resistant to keep equipment rolling. Alloy steels are the answer to these needs.

Republic Alloy Steels are exceptionally high in strength and toughness. They withstand severe shock, strain, vibration and sudden reversal of stress. They respond uniformly to heat treatment and produce hard, wear-resisting surfaces. Gears, wrist-pins, connecting rods, crankshafts, valve springs, bearings and other mechanical parts give longer uninterrupted service when they are made of alloy steels.

Republic Metallurgists are ready to give you prompt, helpful assistance in properly applying alloy steels to your specific needs. Use their services—and alloy steels—to keep your vitally needed equipment rolling with less down time.

REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES • • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, New York

Republic ALLOY STEELS

REPUBLIC STEEL

Other Republic Products include Stainless, High Strength and Carbon Steels—Sheets—Plates—Pipe—Bolts, Nuts and Rivets—Boiler Tubes

G-E PORTABLE LOADING RESISTOR SIMPLIFIES TESTING

Complete checking, of diesel-electric performance—without moving the locomotive—can be done with the G-E *portable* loading resistor. Tests diesel-engine output, and generator and control performance—quickly, accurately, simply. One man can often do the whole job, and there is no complicated operating or maintenance procedure. Write for further details. *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*

Shop Motors and Controls • Shop Testing Equipment • Undercar Power Plants • Lighting Systems • Electric Heaters • Signal Power Systems • Power Distribution Systems • Electric and Diesel-Electric Locomotives

GENERAL ELECTRIC

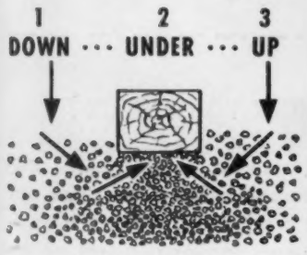
152-16

Are you investing your dollars wisely ?

"Tamper Test" for Track-Maintenance Men

Here are questions that maintenance-of-way men are today asking about production tampers. And here are the answers, honestly set down as *we* see the facts.

Question No. 1

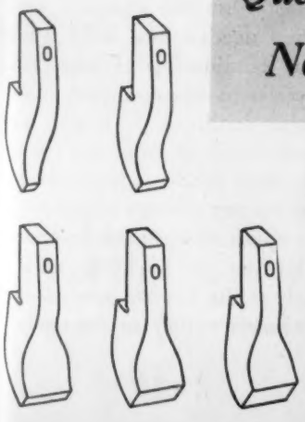


WHAT METHOD OF TAMPING IS MOST EFFICIENT?

a. Today's leading makes of production tampers *vary* in operating principles. One depends solely on a *vibrating* action. Another employs vibration plus a "squeeze" of the ballast by the tamping bars. A third adds only a partial squeeze to a direct, single, air-actuated force. But the Pullman-Standard Power Track Ballaster employs *triple action for full compaction.* An exclusive patented cam action and tamping bar design combine to direct the tamping force downward, *then inward and upward.* Thus, the ballast is not only forced *under* the tie, but *up against* the bottom of the tie, as shown in the diagram.

The Pullman-Standard Power Ballaster is the *only* triple-action (three-force) tamper available today to America's railroads.

Question No. 2



WHAT TAMPER WORKS WELL IN ALL TYPES OF BALLAST AND UNDER ANY RAISE SPECIFICATION?

a. The Power Ballaster has *proved* its ability to operate in *any type* and *size* of ballast. Also, it has proved its ability to tamp *any raise*—0 inch up to 8 inches—with equal efficiency and production quality. Different sizes of interchangeable tamping bars (as shown) and a simple drophead cam adjustment permit compacting any type of ballast . . . to any desired raise . . . and on any rail weight (60 lbs. to 155 lbs.).

With labor and ballast costs up, the Power Ballaster's *flexibility and dependability* of operation make it a sound investment for the future.

The Pullman-Standard Power Ballaster is the only *universal* production tamper available today to America's railroads.

over

Question No. 3

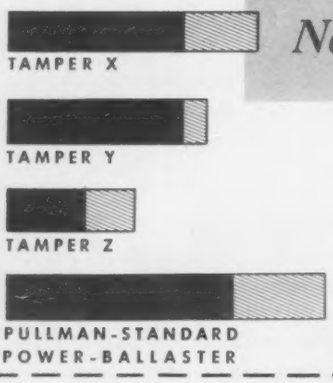
WHAT TAMPER PRODUCES THE BEST-QUALITY, LONGEST-LASTING TRACK?

a. Here's a typical example of the long-lasting qualities of Ballaster-tamped track. One of the heaviest-tonnage mainline tracks between New York and Chicago (1934 rail) was tamped in July, 1946, by one of the earliest postwar Power Ballasters. Not reworked since, today this track is still in good, usable condition for some of the nation's fastest, heaviest, and most frequent mainline freight, express, and passenger traffic. Recent inspection reports of this railroad's maintenance-of-way engineers regarding this track (see photo) prove that *four or more years of reliable track life* can be assured by proper use of the Power Ballaster. Secret of the Power Ballaster's ability to produce better, longer-lasting track: *Triple-action* compaction; *ample power* to meet varying ballast and raise conditions; and the *uniform* application of a three-force tamping action.

The Pullman-Standard Power Ballaster produces the best-quality, longest-lasting track tamping available today to America's railroads.

Question No. 4

WHAT TAMPER HAS THE HIGHEST PRODUCTION RATE?



a. According to our most reliable information, here are the hourly tamping production rates of other types of mechanical tampers: 350 to 500 feet; 350 to 400 feet; 150 to 250 feet. *On the other hand,* performance studies made during part of the 1950 work season on seven Power Ballasters operating under the variety of ballast and raise conditions of six different railroads *prove* that these seven Pullman-Standard Power Ballasters finished-tamped 318,377 track feet (60.3 miles) of track during the 590¼ hours of studied operation. *This is an average of 539.39 feet of finished-tamped track per operating hour per machine.* Sustained hourly averages of 450 to 650 feet for the Power Ballaster are normal production rates.

The Pullman-Standard Power Ballaster delivers *more production of quality track per hour* than any other tamper available today to America's railroads.

Question No. 5

WHAT TAMPER IS EASIEST AND MOST ECONOMICAL TO OPERATE?

a. Judge other tampers by these Power Ballaster features.

This machine is *completely self-propelled.* It has a running speed of 25 m.p.h. so that it can quickly reach work locations and rapidly run to sidings. Thus work delays due to train interruptions are reduced to a minimum. The set-off mechanism is self-powered and the unit can, therefore, be set off laterally in from 3 to 5 minutes.

With only two levers to manage, the operator, seated directly above and in view of the tie to be tamped, can readily and easily keep the work moving smoothly, rapidly, efficiently. Unlike the operators of other production tampers, the operator of the Power Ballaster merely locates the machine over the tie and applies the predetermined number of strokes to the ballast. All the other phases of the triple-action compaction (for instance the amount and uniformity of applied force) are automatically controlled, thus minimizing the risk of man-caused production irregularities.

Competing production tampers, on the other hand, utilize 12, 2 or 4 independent power heads.

The Power Ballaster has many other exclusive design features to facilitate easy, dependable low-cost operation . . . devices such as the automatic mechanism to feed ballast from the shoulder into the crib when needed and only when needed (thus eliminating at least two laborers required by other tampers under most operating conditions). It also has enough power to nip up loose ties (eliminating two more laborers required by other tampers when ties are loose).

The easily operated Pullman-Standard Power Ballaster produces finished-tamped track at the lowest cost of any tamper available today to America's railroads.

Question No. 6

WHAT TAMPER IS EASIEST TO MAINTAIN AND HAS A LONG AND USEFUL LIFE?

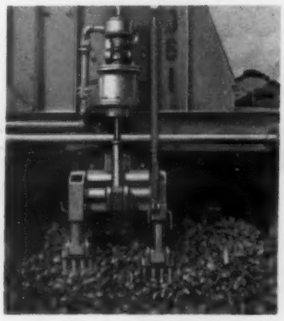
a. The tamper *we* can speak for is soundly engineered and ruggedly built . . . specifically designed to hold up *on the job* and to facilitate minor repairs and adjustments on location. Many impact-type ballasters sold to the railroads 15 to 18 years ago and even 24 years ago are still serving their purchasers. No other production tamper has ever equalled the Ballaster's long-life service on American railroads.

Backing the field performance of the Power Ballaster is a *training course* for the railroad's own personnel, to teach them correct operating procedures. And back of this effective training program are a *trained crew of factory service men and a complete stock of spare parts*—ready to meet any emergency, anywhere.

As materials and personnel become more difficult to obtain, the *value* of Pullman-Standard's training, spare parts stock and field services, as well as its known policies and organization, becomes more important.

Pullman-Standard backs the Power Ballaster with a most *complete and effective* customer service program.

Question No. 7



WHAT TAMPER IS ENGINEERED ON THE BASIS OF A CONTINUING, PROGRESSIVE, COMPLEMENTARY EQUIPMENT DESIGN?

a. Each work season, Pullman-Standard field studies check the performance of Power Ballasters operating under varying ballast and raise conditions. The data secured from these studies enable Pullman-Standard engineers to design improvements directed toward reducing maintenance and labor requirements and increasing the productive efficiency of the Power Ballaster's operation.

It is also a Pullman-Standard policy to engineer equipment improvements so that, when possible, they can be incorporated in previously built Power Ballaster units. For instance, the tamping strut, which transfers the weight of the machine entirely onto tamped track during the tamping operation, is not only a customer optional feature, but can be readily and economically added to all the Pullman-Standard Power Ballasters ever built. This same statement can be made for all other postwar Pullman-Standard Power Ballaster equipment improvements.

Pullman-Standard's progressive, complementary equipment engineering policy protects your Power Ballaster equipment investment and makes its usefulness long-lived.

Question No. 8

WHAT TAMPER PRODUCES QUALITY TRACK AT THE LOWEST COST?

a. We have been able to obtain a limited amount of data regarding the performance, maintenance, and labor and amortization requirements of competitive production tampers. In using these data, we have leaned backwards to favor the competing machines when comparing their production labor requirements and per-tamped-track-foot costs with those of the Power Ballaster. However, even if an hourly production rate of only 500 feet is used for the Power Ballaster (as compared with the 539.39-foot average established in Question No. 4), the substantial reduction in tamping costs obtained by railroads using the Power Ballaster is graphically illustrated in a chart which our representative will be glad to show you.

The Pullman-Standard Power Ballaster enables America's railroads to produce *quality* tamped track *at a lower per-track-foot cost* than any other available method.

over

Question No. 9

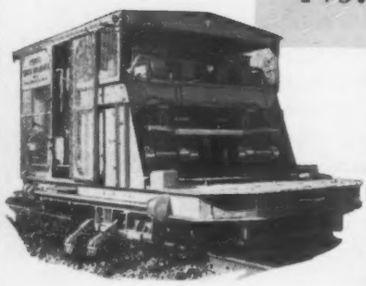
WHAT TAMPER GUARANTEE CAN NEVER BE DOUBTED?

a. Railroad men know what to expect from Pullman-Standard, a company that has been serving America's railroads *dependably* for more than 83 years. Most guarantees *read* alike..."against defects in design, materials, workmanship" and so on... but there is an *unwritten* Pullman-Standard guarantee that goes much further.

It might be expressed like this: "We guarantee this Power Ballaster, if properly used, to do a whale of a job for you. If it doesn't, we'll help you find the reason why... and *act accordingly!*"

Only Pullman-Standard's Power Ballaster is backed by a company which has reliably served America's railroads since 1867.

Question No. 10



WHAT TAMPER PAYS FOR ITSELF WHILE YOU USE IT?

a. Pullman-Standard has four plans and eight payment methods available, all designed to enable the railroads to obtain the Power Ballaster and meet the purchase or rental payments out of the savings accruing from its use. Consult your Power Ballaster representative to determine which plan and method best fits *your* operating requirements.

Summary:

Whether you select your tamper for its high production rate or its ability to produce quality, long-lasting tamped track, or its net low-cost operation, long-life usefulness, progressive engineering, or the manufacturer's reputation for effective customer service and reliable guarantees, the Pullman-Standard Power Ballaster is your best tamping equipment investment.

POWER BALLASTER PRODUCTS DIVISION

Pullman-Standard

CAR MANUFACTURING COMPANY

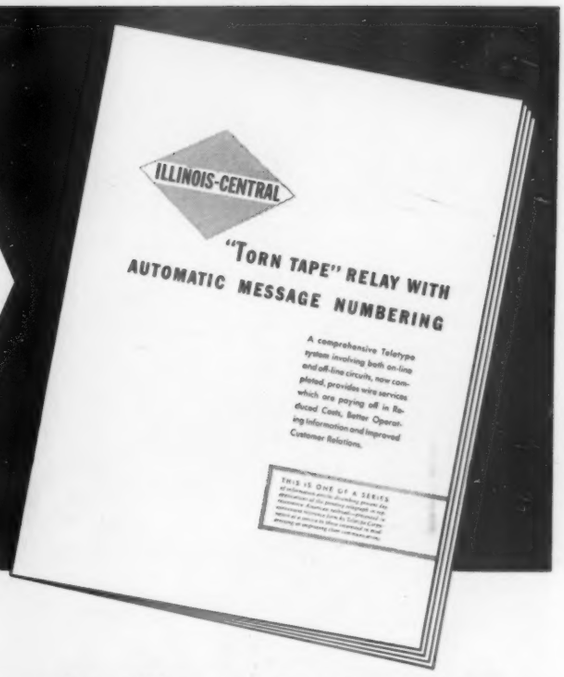
79 East Adams Street, Chicago 3, Illinois

BIRMINGHAM 3, 1004 First National Building • CLEVELAND 15, 907 Midland Building
NEW YORK 17, 52 Vanderbilt Avenue • PITTSBURGH 19, 1115 Gulf Building
WASHINGTON 6, D. C., 1025 Connecticut Ave., N. W.
SAN FRANCISCO 4, 2910 Russ Building

CANADA: The Holden Co., Ltd. • Montreal 3, 614 St. James St. W.
Toronto, 128 Simcoe St. • Winnipeg, 150 Princess St. • Vancouver, 769 Powell St.

NEW TELETYPE BOOKLET

...tells how Illinois Central network handles 22½% more traffic...



Send for your FREE copy—see how the Illinois Central uses:

Photos like this show actual Illinois Central installations.

- ★ *Torn Tape System*
- ★ *Automatic Message Numbering*
- ★ *Colored Tape Identification*
- ★ *Space-Saving Cabinets*
- ★ *Automatically Prepared Car Cards*

This informative booklet tells how the Illinois Central built its new Teletype system involving both on-line and off-line circuits practically "from the ground up," in a period of two years. Whether you are interested in the engineering details or in the results obtained, here is a comprehensive story which may give you just the information you need for your own communication system.

Previous booklets on how the Union Pacific, New York Central, and Baltimore and Ohio streamlined their communications systems also are available.

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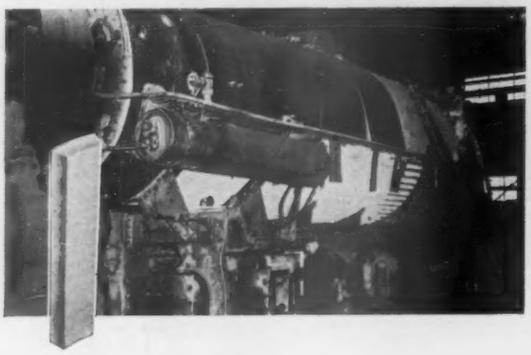
...these Johns-Manville products that cut maintenance, save heat and power, reduce operating costs

J-M Building Materials ▶

Weatherproof, fireproof J-M Roofing is one of many durable J-M Building Materials that have provided substantial savings in maintenance for the Illinois Central. On their Stuyvesant Docks in New Orleans, for example, this J-M Built-Up Roof is still in good condition after more than 35 years of service.



◀ J-M Insulations

Many types of Johns-Manville Insulations are used by the Illinois Central to save heat and power and contribute to passenger comfort. These include J-M 85% Magnesia boiler lagging, shown in photo at left being applied to an Illinois Central steam locomotive.

J-M Packings and Gaskets ▶

The set of J-M Sea Ring packings shown at right is one of many styles that help the Illinois Central to keep maintenance costs down. To simplify packing replacement problems, this railroad uses the J-M Standardized Packings Plan, under which the most simplified methods of ordering and stocking packings are employed.

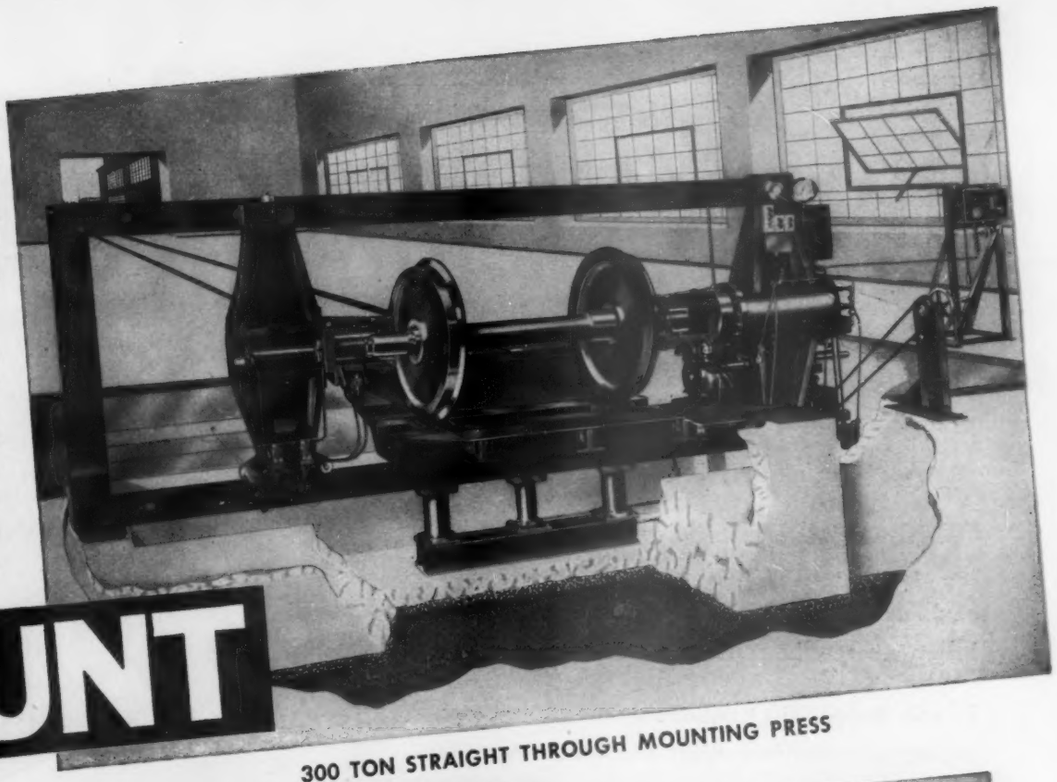
* As one "old-timer" to another, Johns-Manville congratulates the Illinois Central on its 100th birthday and wishes this great pioneering railroad good luck during its next hundred years!

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville 93 YEARS OF SERVICE TO TRANSPORTATION

Now, ALL Railroads can put wheel mounting and demounting operations on a real production basis with new, modern W-S Wheel Mounting and Demounting Presses.

Incorporating outstanding design and construction features, these latest developments of W-S Engineers provide the fastest cycle of operation ever attained in this type of equipment, and they handle any type of wheels.



300 TON STRAIGHT THROUGH MOUNTING PRESS

MOUNT and DEMOUNT in Seconds with NEW W-S WHEEL PRESSES

Smashing time records daily, these New Watson-Stillman Speed Presses permit YOU to set your own floor-to-floor speed time—and this is only limited by your loading and unloading facilities.

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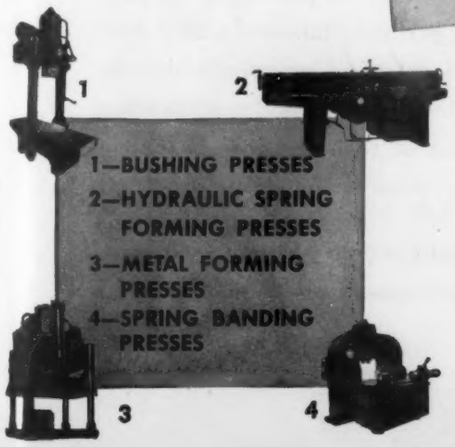

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Manufactured in Canada by CANADIAN VICKERS, Ltd., MONTREAL

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Denver 2, Colo. ..... Overgard Machine Tool Co.	San Francisco 5, Calif. ..... Overland Supply Co.
New York 17, N. Y. ..... Eastern Railway Supplies, Inc.	Washington 5, D. C. ..... Ralph Payne

9-K-32

THE CRUSADE FOR BETTER

THROUGHOUT its 95-year history of railway reporting, *Railway Age* has constantly challenged itself with the question of how can it better serve the railway industry.

In the early 1870's, when some railroads were laying rails five feet apart and others were laying them three feet, six inches apart, *Railway Age* pointed out the ultimate transcontinental interchanges of traffic, and singlehandedly pioneered the fight for a uniform gage. This effort, known as "The Battle of the Gages" was successfully waged with substantially every technical paper and papers of general circulation against us.

Again in the '70's, George Westinghouse came into the *Railway Age* offices with a model of an air brake under his arm. Seeing its possibilities, *Railway Age* openly expounded its cause editorially. You know the results.

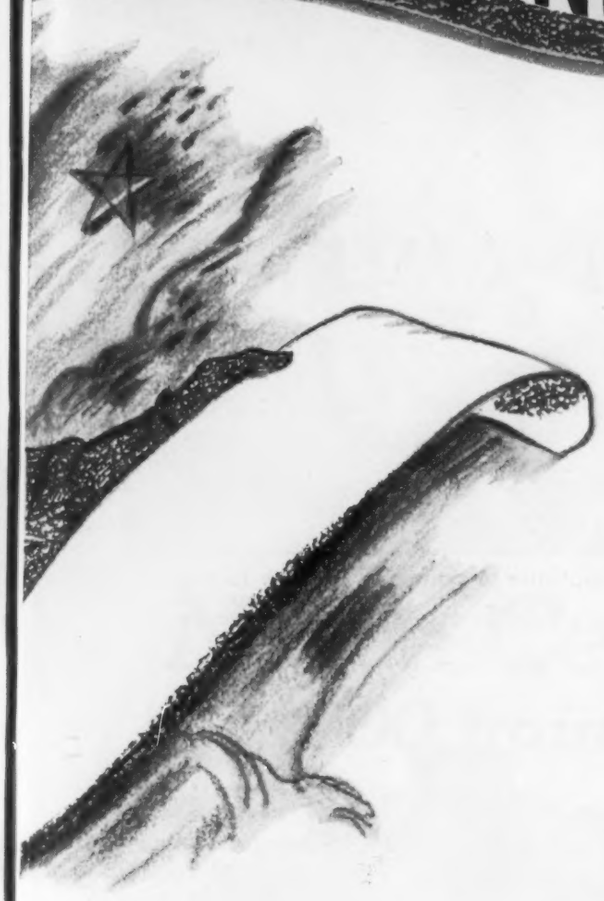
One of *Railway Age's* great editors, M. N. Forney, pioneered the adoption of standard threads for bolts and nuts. Mr. Forney stated that this paper had published on that subject enough to make a book as big as The New Testament.

In 1910, *Railway Age's* Samuel O. Dunn became acquainted with the "safety first" movement initiated locally by a western railroad. Mr. Dunn was convinced that this road had the solution to the railroad accident problem, which was then acute, and began at once a campaign in *Railway Age* to extend the plan to all railroads in the country. The success of these efforts is now a matter of record.

The efforts of this paper, over the past two decades and more, to gain larger public recognition of the public interest in providing equality of opportunity for privately financed transportation, as compared with rival agencies which do business on public property, are now bearing fruit in recognition of this principle by objective students of national economic policy.

The results of *Railway Age's* campaign to promote modern railway passenger service are aptly

RAILROADING CONTINUES



recorded in the Coverdale & Colpitts report on the institution of streamline passenger trains, dated June 30, 1939:

"Perhaps no instrumentality not directly engaged in the construction or operation of railroad trains has done more to promote and encourage the introduction of the new types of passenger equipment on American railroads than has the *Railway Age*".

In February of last year, *Railway Age* inaugurated its monthly Freight Traffic issues — designed (1) to make known the specific accomplishments of the railroads in improving their freight service, and (2) to develop greater "customer-mindedness" on the part of the specialized railroad organizations themselves. Reception of these issues, both by railroad men and railroad customers, indicates enthusiastic acceptance for this new program.

And so it goes! Mention of all the many contributions *Railway Age* has made and is making to the progress of the industry and of railroad men would require many pages to enumerate.

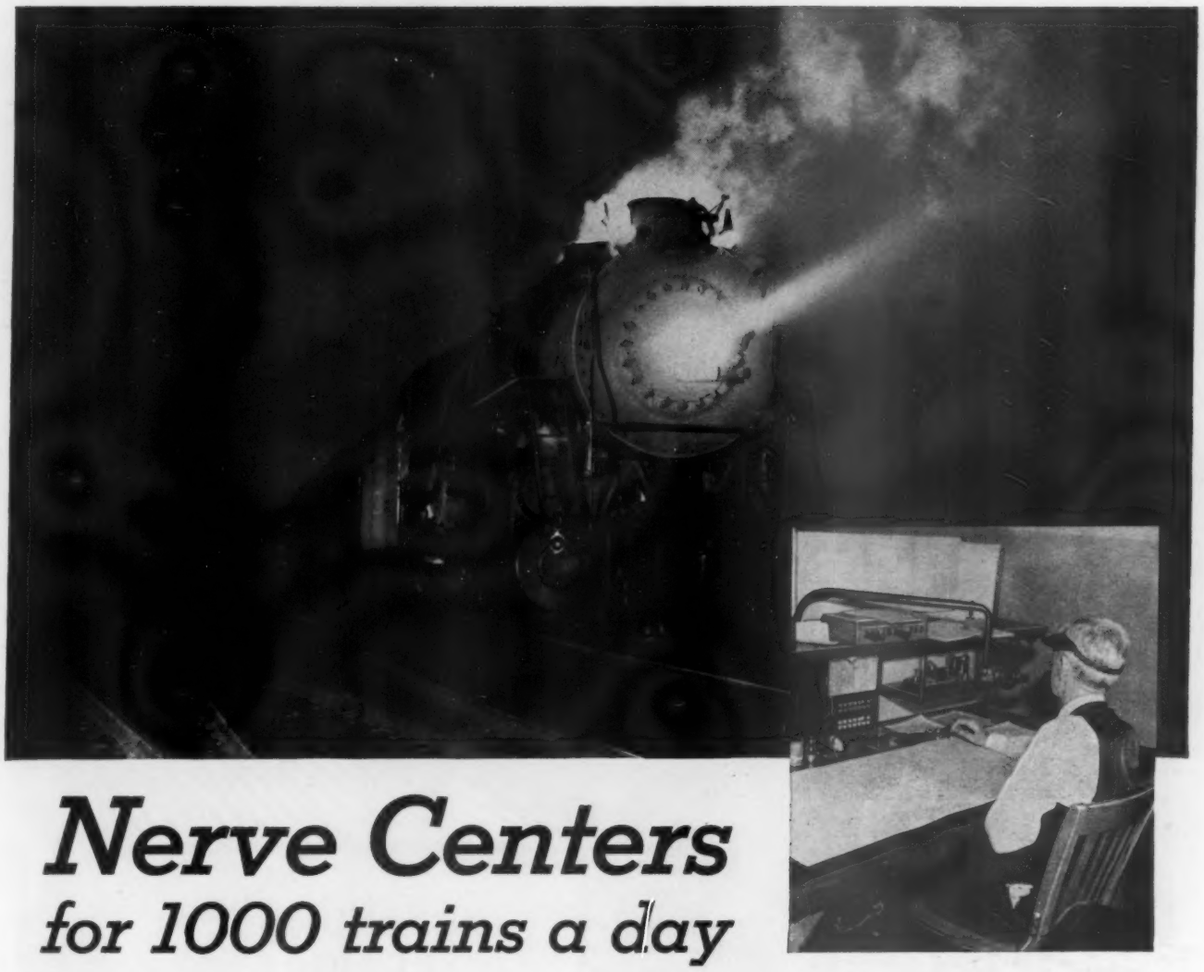
Development of the railways' progress has been, for nearly a Century, faithfully reported and fostered by *Railway Age* — the greatest educational force in the railway industry!

Its readers are the men who are, and who will be, making the industry great. We hope you're one of them. If you're not, why not join them—and enter your own *Railway Age* subscription order today.

A personal subscription to *Railway Age* is the best bargain available to the career-minded railroader with a serious professional concern in his work—and in his future.

RAILWAY AGE

30 Church Street, New York 7, New York



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Every 24 hours dispatchers guide more than 1000 freight and passenger trains through the maze of switchwork that forms the Illinois Central system. To keep *clear track ahead* for this heavy volume of traffic, towermen rely on a complete system of efficient telephone and dispatch equipment supplied by Graybar Electric Company.

Today, after a full century of railroading progress, crack Illinois Central trains roll over a 6500-mile network of track . . . serve 14 states from the Great Lakes to the Gulf of Mexico . . . help the "I.C." live up to its slogan, THE MAIN LINE OF MID-AMERICA.

Though a relative youngster, Graybar, too, has grown through 80 years of service to the nation's railroads . . . has learned through experience how to solve railroad electrical supply problems.

Qualified Graybar Railroad Specialists will be glad to help in the selection of pole-line supplies, lighting, communication equipment, wiring materials and supplies, repair-shop electrical apparatus, and electric tools. That's why railroad men say "for friendly service and on-schedule deliveries, order it via Graybar." *Graybar Electric Co., Inc. Executive Offices: Graybar Building, New York 17, N. Y.* 114-202

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First in Mid America...

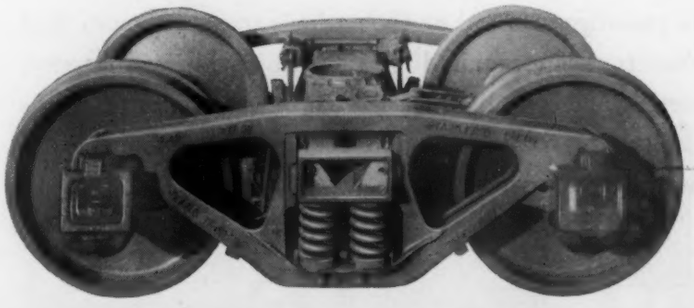
The United States Government and the Illinois Central Railroad collaborated in the construction of this Gilbertsville, Kentucky, bridge and dam. It is the only structure of its kind in the United States

The Illinois Central Railroad is an outstanding example of American Enterprise.

An unpeopled wilderness gave way to great centers of commerce and industry and fertile farmlands as the steel rails of the Illinois Central crossed swamp prairie. From small beginnings it has grown to one of the country's major transportation networks serving fourteen states in Mid-America.

Well named "Main Line of Mid-America," the Illinois Central stands on the horizon of its second century with the same kind of faith and enterprise which has so well characterized its first 100 years.

Congratulations Illinois Central Railroad—
and a "Clear Board" in Your Second Century!



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Model 10 Signals at Anna, Illinois, where the initial Model 10 installation on the I.C. was made in December, 1938.

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The Western Railroad Supply Co. applauds this fine record, as well as your achievements in *public* safety during your hundred years of service.

In the field of railroad-highway grade crossing safety, we're proud, indeed, that WRRS Model 10 Automatic Signals have played so important a part in avoiding accidents.

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. . . are preferred protection on a hundred railroads. The record? Not a single accident has ever occurred as a result of operation failure on the part of these signals.

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The "Green Diamond", modern streamliner of the Illinois Central Railroad.

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From its very beginning, the Illinois Central Railroad has been a dynamic force in developing the rich area which it serves. It has helped to transform swamp and prairie into fertile farming land and centers of commerce and industry.

For many years Exide Batteries have been serving the Illinois Central Railroad, providing power for car lighting, air-conditioning, Diesel locomotive cranking and signal systems.

You can always count on Exide Batteries for dependability, long life and low cost maintenance.

THE ELECTRIC STORAGE BATTERY COMPANY
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Exide Batteries of Canada, Limited, Toronto

"Exide-Ironclad"
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1888 . . . DEPENDABLE BATTERIES FOR 63 YEARS . . . 1951

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Built in Illinois Central Car Shop,
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"Gould's periodic inspection service and technical battery assistance help us keep our battery maintenance costs low."

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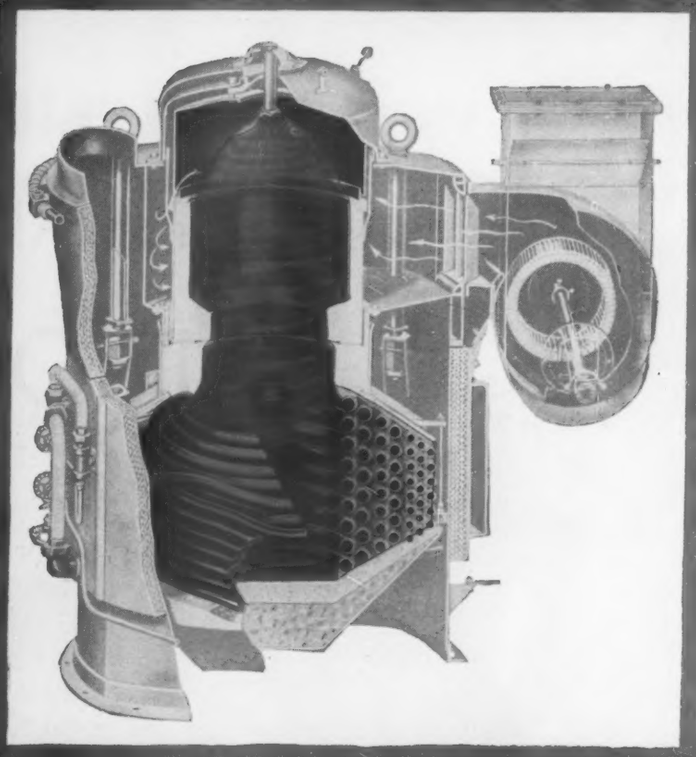

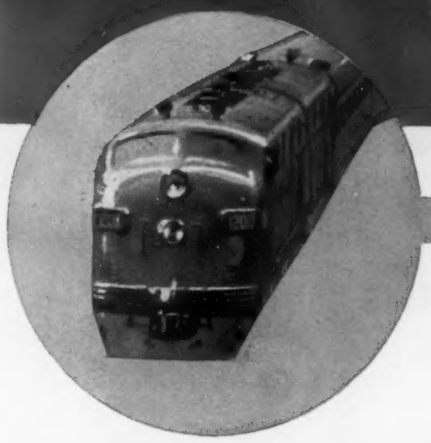

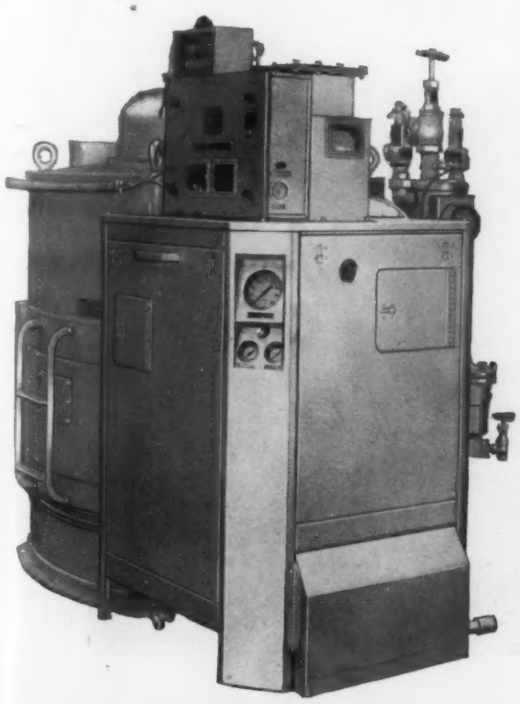

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. . . uses less water per pound of steam delivered at the train line and it delivers this steam at 99.5° of dryness.

Its extremely high oil burning efficiency evaporates 13 pounds of water to 1 pound of fuel oil. (Over 84% efficiency)

Vapor Steam Generators speed up train schedules by requiring fewer stops to take on water and by delivering *more mileage out of a tank of water* than any other type of steam generator. Vapor Steam Generators are lowest in initial cost, lowest in maintenance cost, and offer the highest reliability.

Congratulations to the Illinois Central Railroad on its 100th Anniversary.

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Our Hats Are Off to the ILLINOIS CENTRAL!

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THE READE COMPANY HAS ONLY BEEN IN THE BUSINESS OF PROVIDING WEED KILLERS FOR 68 YEARS.

WE SALUTE THE ILLINOIS CENTRAL IN ROUNDING OUT 100 YEARS OF SERVICE TO ITS PUBLIC AND PATRONS.

One of the marks of good railroading which distinguishes the "I. C." is its insistence on *clean track*. It is a source of great pride to us that over many years the Reade organization has cooperated with Illinois Central track forces in achieving this end.

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Illinois Central's "City of New Orleans"

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Experience proves that modern railroad Diesel operating problems can be solved only through the cooperation of operator, builder and oil supplier. Socony-Vacuum, the pioneer in Diesel lubrication, is contributing more to this cooperative effort today than ever before.

Backed by a $10,000,000 annual petroleum research program, we are making exhaustive laboratory and field evaluations—holding "round-table" discussions with leading operators and builders to exchange our findings. As a result, our Diesel lubricating oils are constantly being improved—are, in turn, improving Diesel performance on many major roads right now!

Why not take advantage of our experience and products to help solve *your* Diesel troubles?

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WORLD'S GREATEST LUBRICATION KNOWLEDGE AND ENGINEERING SERVICE

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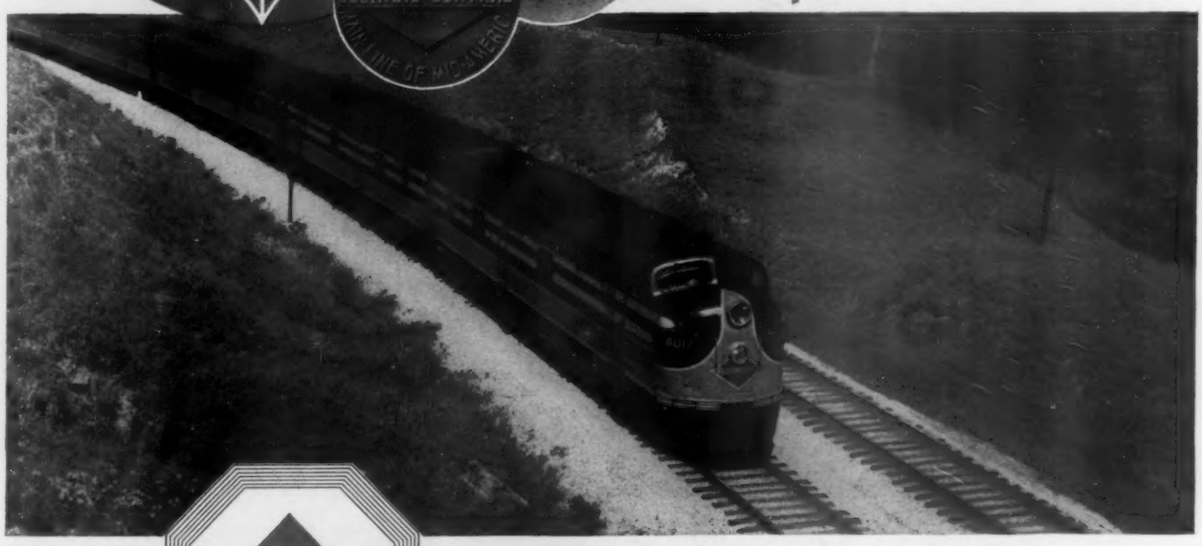
RAILROADS STILL RUN ON WOOD!

ONE hundred years ago, when Illinois Central was born, its rails were laid on split logs. Today, Illinois Central's streamliners roll over the finest modern roadbed and the ties are still wood.

Of course, today's wood ties are vastly improved and the Illinois Central was one of the leaders in bringing about this progress. In fact, the inception of the present Koppers wood preserving activity, with 22 plants and thousands of customers, began with the Illinois Central; for back in 1903 the first customer for pressure treating in any of the Koppers plants was the Illinois Central.

We're naturally proud of having continuously served the Illinois Central for so long, and we believe there is a sound basis for this harmonious relationship. Pressure-treated ties offer substantial benefits to the users; and Koppers has been able to give Illinois Central the kind of pressure-treatment service that a successful, progressive railroad needs.



KOPPERS **PRESSURE-TREATED WOOD**

KOPPERS COMPANY, INC. • Pittsburgh 19, Pa.

Congratulations to the "IC" on its first 100 years as one of America's greatest railroads.

FOR THE NEW "IC" BRIDGE AT CAIRO

They Are Installing Conley Expansion Rails

Shown above is the new "IC" bridge at Cairo, Illinois, the latest in a long series of Conley Expansion Rail installations for leading railroads throughout the Nation. Conley Expansion Rails and Conley Hinged Joints are available for all types of bridges; fixed span, lift, bascule and swing. Write for complete information.

To meet today's demand for faster, heavier and smoother train traffic, they're installing Conley Expansion Rails on the new "IC" bridge at Cairo, Illinois. Automatically self compensating for all expansion and contraction conditions, these ruggedly built expansion rails eliminate wheel pounding — structural vibration — and possible damage to rolling equipment. Designed and built upon a practical and proven principle, they provide a continuous and smooth tread surface over the entire expansion point. Made of Manganese toughened steel, they give years and years of highly satisfactory service. Manufactured exclusively by the Conley Frog & Switch Company, Memphis, Tenn.

For further information, engineering data and facts on the many features of the Conley Expansion Rails and Conley Hinged Joints for fixed span, lift, bascule and swing bridges, address W. A. Summerhays, Sales Engineer, 7427 Merrill Avenue, Chicago 49, Ill.

CONLEY
EXPANSION RAILS

advancement like this typifies ILLINOIS CENTRAL'S 100 YEARS OF PROGRESS

Illinois Central's Markham Yard, 22 miles south of Chicago, Illinois. View is from the new retarder control tower, showing completed classification tracks and type E retarders. 64 classification tracks and all retarders are controlled from this tower.

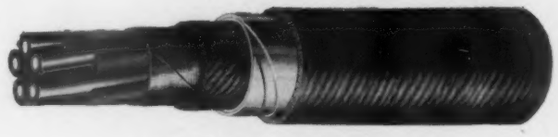
Illinois Central's new Markham Yard layout is the pioneering installation of pushbutton route selection in a retarder-equipped classification yard. For control and operation circuits of car retarders, switch machines, track circuits and signals in the Markham Yards, Illinois Central selected Okonite cables.

Okonite-Okoprene track wire and parkway cable are standard construction for underground service on the Illinois Central. That's because the double protection of Okonite insulation and Okoprene protective covering assures high dielectric strength plus long-time resistance to moisture, oils, acids and alkalies encountered in the soil.

Okonite-Okoprene wires and cables are made from premium materials, by exclusive manufacturing processes not duplicated by any other cable manufacturer. For instance, the strip method of applying insulation assures absolute uniformity of wall thickness—perfect centering of conductors. Insulation and protective covering receive a *single* vulcanization in a continuous tin mold under high pressure—the only way to achieve a perfectly homogeneous bond.

Illinois Central's past experience with Okonite cables justifies their use in this critical installation. For details about Okonite railroad cables, ask your Okonite representative or write to The Okonite Company, Passaic, N. J.

Single conductor heavy-duty Okonite-Okoprene track wire.



Multi-conductor Okonite-Okoprene non-leaded steel-armored parkway cable.

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THE BEST CABLE IS YOUR BEST POLICY

insulated wires and cables

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RAILWAY AGE

EDITORIAL COMMENT

STRIKES CONTINUE BECAUSE STRIKING IS NOT RISKY AND IS USUALLY PROFITABLE

At the time of the mid-December "sickness" walkout by yardmen affiliated with the Brotherhood of Railroad Trainmen this paper predicted that "in due course the strikers will be coaxed to go back to work . . . but no one who fomented or engaged in the rebellion will be in any way punished; and, in a few weeks or months, a similar and perhaps more widespread insurrection will break out." That prediction may safely be repeated now and *ad infinitum*—until something is done by Congress or the Administration to inject some risk into concerted effort to tie up railroad service.

Strikes are now endemic on the railroads for the simple reason that, in repeated experiments with the strike weapon during the past four years, the unionists have discovered that nobody risks or loses anything by striking—and that strikes usually lead to concessions which would not have been obtained without striking. Railroad unionists are ordinary mortals like other Americans—neither saints nor devils, on the average—and they respond to incentives just as everybody else does. By its tinkering with labor legislation in the 1930's Congress made it impracticable for railroad managements to fight a strike by discharging the strikers and employing new workers—and thus issued an invitation to railway unionists to behave as they are now behaving. The inherent conservatism of railway unionists is evidenced by the fact that they did not begin to make extensive use of the strike weapon until fifteen years or more after Congress had tied the hands of management in fighting strikes and taken all risk to the unions out of industrial warfare.

There are two recognized methods of promoting peace and discouraging warfare. One of them is the "balance of power" device, whereby each of two possible contenders is so well armed that each one realizes he is incurring a frightful risk in attacking the other. This is the method by which our country is endeavoring to assure peace between the communist and non-communist parts of the world—that is by building up the armed might of the non-communist part, not for aggression, but to make an attack by the communists extremely hazardous for them. This is the method, also, which preserved industrial peace on the railroads prior to the advent of the New Deal. The unions had their "economic power" then, as they have it now—but managements also had a lot of "economic power" in industrial disputes in those days. For instance, managements could employ "strike-breakers" without governmental hindrance. They could discharge strikers, thus destroying their "seniority" and their pension claims. When management had this power, the unions would not strike unless provocation became extreme—as it seldom did. The consequence was that peace prevailed in labor relations on the railroads.

"Rule of Law"

The other recognized method of preserving peace, besides the "balance of power" device, is the rule of law—that is, the presence of a power greater than that of either of the potential combatants which forbids either of them to resort to warfare and is prepared to punish them if they do so. In lieu of combat, the contestants—if they cannot settle their grievances by direct negotiation—are invited to present them to a tribunal established by the superior power, and are required to accept peaceably the judgment of this tribunal. The United Nations is trying to become this kind of superior power, able to lay down and enforce the law of peaceful adjudication of disputes among nations, but it has not yet made the grade, because it has not yet acquired sufficient coercive

power to make its judgments stick. The U.N.'s lack of success does not invalidate the method—it *will* work if fully applied.

If the people of the United States want to restore industrial peace on the railroads—and not live in apprehension as to when the next tie-up of essential transportation is going to occur—then they have only two alternatives to choose from. They must call upon Congress either (1) to change the law so that railroad managements can employ strikebreakers without hindrance, cut off the company part of pension and unemployment payments to strikers, and refuse to "recognize" recalcitrant unions; or (2) establish a rule of law in railroad labor relations by forbidding strikes and lockouts, and enforcing "sanctions" on offenders. There would doubtless be objections from the unions and from sentimentalists to the restoration of management's power to do battle. The answer to such objections is that, so long as management had this power, industrial peace reigned on the railroads.

The other alternative—the establishment of a reign of law in railroad industrial relations by forbidding strikes and lockouts and applying "sanctions" to offenders—was the purpose of legislation introduced into the 81st Congress last year by Senator Donnell of Missouri. This legislation got nowhere. The Republicans were no more enthusiastic for it than the Democrats. And Senator Donnell was defeated for re-election last November. Furthermore, at the very end of the closing session of the 81st Congress, and after the "sickness" walkout of mid-December, Congress rewarded the railway labor unions for their turbulent behavior by enacting for them a bill authorizing the "union shop" and the "checkoff." It is expecting too much of human beings that they should pursue a virtuous and peaceful course when trouble-making is highly rewarded and entails no hazards whatever.

"Unless Congress Applies . . . "

Unless Congress applies either the balance-of-power or rule-of-law methods for the establishment of peace on the railroads, then we must resign ourselves to work stoppages of increasing frequency and severity. This follows from the fact that there are so many unions on the railroads and that to a considerable degree they are in competition with each other. There is only one union that can tie up the coal mines, or the steel plants or the automotive industry, but any one of 20-odd unions can tie up or seriously disrupt the service of the railroads. And when there are so many unions it becomes very difficult for one of them to show signs of a cooperative or conciliatory spirit, lest a rival union accuse it with some degree of plausibility of lack of zeal for the welfare of its members.

A good many legislators, while a railroad strike is in actual progress, show great enthusiasm for punitive measures of unjustifiable severity against the strikers—followed by cold indifference even to such a temperate measure as the Donnell Bill when no work-stoppage is actually in effect. The effect of such temporary waves of enthusiasm followed by indifference is to apply the familiar leaky-roof pattern to the problem, thereby getting nothing done at all. When it's raining the leak in the roof can't be fixed, and when it's not raining no fixing is needed.

During the present controversy, railroad spokesmen have had very little to say publicly—a quite proper reticence, because the railroads are being operated under the aegis of the Army, and the agreement which brought on the current attack of "sickness" was negotiated in the White House through the good offices of Dr. John Steelman. Proper restraint as regards the immediate controversy, however, would not foreclose a long-range program of employee and public education on the fundamental issues at stake in the railroads' relations with their organized employees. The continuance of private ownership may well hinge on securing a wider understanding and acceptance of management's policies in this area.

LOCOMOTIVE FAILURES AND CASUALTIES

The report of the director of the Bureau of Locomotive Inspection of the Interstate Commerce Commission, reviewed in the February 5 issue of *Railway Age*, page 51, records the fact that the decline in the number of accidents and casualties resulting from failures of steam locomotive parts was associated with a decline in the number of locomotives for which records were filed and in the number of locomotives inspected. This was a major influence in causing the reduction in accidents and casualties. Other influences, however, are also at work.

Comparing the casualties in 1950 with those in 1945 and 1946 from failures of the eleven steam locomotive parts which have been the most prolific source of accidents over the years, the reduction in casualties has been 48 per cent from 1945 and 57 per cent from 1946. The reduction in the number of steam locomotives for which reports were filed is 31 per cent from 1945 and 29 per cent from 1946. The reduction in the number of steam locomotives inspected was about 42 per cent from 1945 and about 28 per cent from 1946.

The eleven parts included in this comparison are crown sheets, the low-water failures of which have been the cause of more deaths than any other single feature of the steam locomotive; brakes and brake rigging; footboards; grate shakers; handholds; injectors and connections; reverse gears; squirt hose; steam piping and blowers; throttle rigging, and water glasses.

The reductions in casualties caused by the failures of these parts indicate improvements in locomotive conditions beyond those reflected in the decline in the number of units. In the case of brake rigging, for instance, there were 10 injuries in 1945 and 12 in 1946; in 1950 there

were two. Failures of injectors and connections were the cause of 12 injuries in 1945 and 10 in 1946. These were reduced to seven in 1950. Grate shakers, failures of which were the cause of 17 injuries in 1945 and 25 in 1946, were the cause of six in 1950. Water glasses, which were the cause of 10 injuries in 1945 and 13 in 1946, were the cause of only three in 1950. There is still room for improvement with respect to some of this group of parts, however. Handhold failures which caused one death and 25 injuries in 1945 and 20 injuries in 1946, were still the cause of one death and 12 injuries in 1949, and 11 injuries in 1950. Squirt hose, with a record of 25 injuries in 1945 and 15 in 1946, caused nine injuries in 1950.

While these are small numbers when compared with the number of locomotives in service and the number of men who operate them, they are indicative of points at which special care is needed because death or injuries are almost inevitable when accidents occur.

In the case of locomotives other than steam, the list of parts, failures of which are responsible for casualties, is short in comparison with that for steam locomotives. Aside from short circuits, the fires due to overflowing or leakage of fuel, crankcase explosions or backfiring are the most persistent and substantial source of accidents and casualties on these locomotives. In 1949 eight accidents and nine injuries were the result of these causes; in 1950 there were four accidents and four injuries. This reduction is undoubtedly the result of growing care and attention to diesel-electric locomotive housekeeping and to better understanding of procedure in dealing with potentially explosive conditions in crankcases.

HISTORY AS A TOOL OF MANAGEMENT

Railroad men are technicians, many of them with rigorous academic training in engineering—hence they harbor a natural and proper suspicion of people whose stock in trade consists only of "ideas," with no ability or experience at assembling men, machines and materials in a manner to get useful work done. All the same, the technician needs "ideas," because technology only tells him *how* to do things—it is silent as to *what* to do and *why*.

With this well-founded suspicion of "ideas" not grounded in experience, there still remains one reliable place well-stocked with this commodity—i.e., history. There is nothing "theoretical" or impractical about the ideas a technician gets from familiarizing himself with the accomplishments of his predecessors and contemporaries in the same line or kindred lines of technological endeavor. From the record of their performance he will inevitably get valid ideas of *what* he, too, can do with profit to the community and himself; and *why* it is worth while to do so.

These reflections are occasioned by the growing tempo and thoroughness with which railroad managements have been probing into the history of the railroad business—especially the historic background of their own particular companies. In this week's issue, on another page, appears the report of this rewarding kind of research on the part of Wayne Johnston, president of the Illinois Central. Mr. Johnston did not originate this type of inquiry, but his paper gives evidence that he plunged into it with characteristic thoroughness—and the interview with him by our western editor indicates that, whatever the sources of his ideas may be, he has developed for himself a well-integrated "philosophy" of how his railroad should be run. The performance record of the property suggests that this approach is one which stands the test of experience.

No other industry is examining its history to the degree that the railroads have been doing—perhaps, for one reason, because no other industry has so much history, and such interesting history, to examine. What the ultimate result of this inquiry may be would be hazardous to predict—but that the outcome will be advantageous can scarcely be doubted. The status of the railroads as an industry has for years been increasingly unsatisfactory. Two hundred years ago the status of the English colonies in North America was similarly unsatisfactory—every one complained about it but few did anything about it. Among those few was a young Massachusetts lawyer named John Adams.

Because of the lack of American law books, Adams read English law books, many of them dating back to the preceding century when Englishmen shook off the tyranny of the Stuart kings. By studying the ideas and arguments of Englishmen against the Stuarts, Adams and other contemporary American students found the arguments and the philosophy they used to unite the colonists in throwing off the English yoke. Thus it is that the study of history in the field of a man's own special interest is by no means merely an innocent pastime; it can be loaded with productive dynamite.

Some of the earlier railroad histories were fragmentary—limiting themselves to dramatic and outstandingly praiseworthy episodes—a limitation being increasingly discarded. Fragmentary history is useful, but by no means so useful as that which includes the unsuccessful struggles and the errors, and not merely the striking successes. We learn from knowing wherein our predecessors failed, quite as much as finding out where and how they succeeded. As the study of railroad history widens and deepens, the ideas which produced fruitful solutions to railroad problems of the past can scarcely fail to spark kindred ideas, as useful for meeting the challenges of today. A specialist in any field needs to get knowledge of present and past, far beyond his daily job. As the gifted Spaniard, Ortega, says of those who concentrate too exclusively on the problems of the day: "While they are minding their own business history may be pulling away the ground from under their feet."

AN ALL-OUT CENTENNIAL CELEBRATION

The occasion of its 100th birthday on February 10, 1951, is being used by the Illinois Central as a means of furthering its long range program of management-employee, railroad-customer, and railroad-public relationships. This has resulted in the creation of a comprehensive, broad-gaged centennial program and technique quite out of the ordinary.

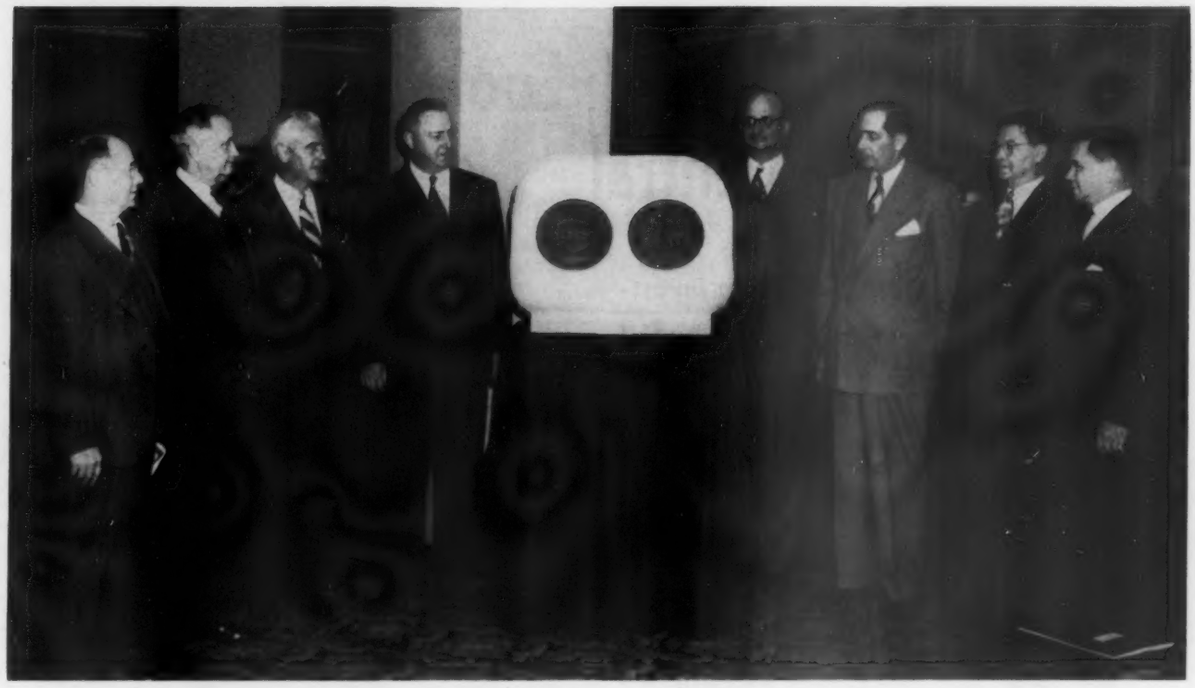
Railroad centennials are becoming more commonplace each year. The I.C. recognized, therefore, that its centennial would require unusual care and preparation to achieve its goal of widespread public interest and participation. Consequently, skill and ingenuity were turned to designing a wholly different, vigorous celebration program. Preparations began over two years ago when President Wayne A. Johnston appointed a committee — made up of representatives from all departments — to plan the centennial program. All of the work in planning, organizing and conducting the centennial celebration has been under this committee's supervision.

The program has grass roots. It is based on the participation of every I.C. employee, and on having the centennial celebrated throughout the far-flung system at community level with local residents and employees. The details of the program were made known to every corner of the system through a dinner in Chicago, last November, at which some 300 supervisory officers of division level or above were "briefed." The centennial committee outlined the entire centennial program, and equipped each man present with a kit giving him complete material for staging similar meetings, though on a smaller scale, in his own territory. The goal was to get every member of the Illinois Central family of employees working to place the centennial story before schools, clubs and civic groups, and to inspire civic organizations and chambers of commerce to plan special events tieing in with the "centennial anniversary of the Main Line of Mid-America." Anticipating a heavy demand for speakers as a result of this grass-roots program, a speakers' training program was undertaken by the personnel department to train a corps of voluntary speakers. Approximately 250 employees made use of this opportunity.

Centennial Book

The official centennial symbol is a medallion designed by the distinguished sculptor, Julio Kilenyi. This medallion is being reproduced in three sizes. One is of large size for use on placques and markers for permanent display at local points throughout the system. The unveiling of these markers and placques — placed in station grounds, town parks, and on station buildings — is being handled by local Illinois Central representatives in each community; by the men and women who are the Illinois Central to its local friends and customers. Others are being reproduced as three-inch paper weights and will be distributed to shippers and others commencing this week. A pocket-sized reproduction is being distributed, starting next week, to all employees and retired personnel.

A colorful and authentic history of the Illinois Cen-



The centennial committee with a replica of the centennial markers, which will be permanently displayed throughout the Illinois Central system. In the usual order, are the following Illinois Central officers: Joseph H. Wright, general counsel; Charles H. Mottier, vice-president and chief engineer; G. J. Willingham, director personnel; George R. Kimball, passenger traffic manager; George M. Crowson, assistant to president; O. O. Albritton, vice-president (purchases & stores); F. E. Martin, comptroller; and C. J. Fitzpatrick, general superintendent transportation

tral, written by Carlton J. Corliss, entitled "Main Line of Mid-America," was published last December as a lead-off for this 100th anniversary year. Approximately 1,500 copies of the book have been presented to libraries, high schools, universities, colleges, and newspapers along the lines of the Illinois Central. And employees were given a prepublication opportunity to buy the book at a discount. The book is being promoted by the railroad, as well as by the publisher, and has already gone into its second printing. Supplementing this centennial history is a 48-page illustrated booklet giving highlights from the history of the company. This is a fresh presentation — not a mere condensation of the Corliss book. One hundred thousand copies are being printed at the start for free distribution.

Even the annual financial report to stockholders has come in for special attention. It will be similar in form to regular annual reports — except that many of its statistical charts and tables will cover the whole 100-year history of the road. It will depict the growth and financial progress of the railroad as a unit since 1851.

The Illinois Central Magazine will have a special February centennial issue containing, among many other articles, a photographic feature on the "hands that run the railroad."

Centennial Flag

Every flagstaff on Illinois Central property is now flying a centennial flag, with markings similar to the face of the medallion. This flag will also be used for decoration on special occasions. Elsewhere, a centennial placard is being placed in the bulkheads of all passenger cars, and will be used for display in ticket offices, store windows, and other public places.

The company's 30-year old program of on-line institutional advertising is being expanded to include 42 off-line newspapers in principal cities, and 11 national magazines for the publication of special centennial advertisements.

The 1951 calendar is a major centennial piece, and features an illustration showing the Cairo bridge as it will appear when present construction work is complete. There will be numerous other centennial reminders, all carrying the medallion theme; drink mixers, coffee cups, napkins, place mats, coasters, match books, cigar bands, and menus. Additional material is being made available as required for special displays, radio broadcasts, newspapers, magazines, and the like. And, in addition, consideration is being given to an essay contest for high school students with scholarships toward college education as prizes.

Entertain Civic Leaders

Official celebration of the centennial really began last Thursday night, February 8, when President Johnston presented, to the Newcomen Society at New York, a paper on the birth and development of the Illinois Central. The biggest celebration of all is scheduled for this coming Friday night, February 16, when the road will play host to 1,000 Chicago civic and business leaders at a centennial dinner. This affair will be unusual: there will be no speakers. Instead, Mrs. Helen T. Geraghty, producer of such famous pageants as "Wheels A-Rolling" at the Chicago Railroad Fair, will present a pageant of the 100-year history of the Illinois Central.

The entire centennial program is being directed and managed as one overall community relations program — and as a part of Illinois Central's contribution to Mid-America.

A "Panel of Experts" Looks at the Illinois Central

A governor, a railroad president, an investment analyst, a shipper, a mayor and a passenger write what they think about this 100-year-old property

A SALUTE FROM THE GOVERNOR OF THE HOME STATE

ADLAI E. STEVENSON is governor of the state of Illinois, where the Illinois Central was conceived and chartered, and now has its headquarters. By virtue of his office, the governor is an *ex officio* director of the railroad. He is well acquainted with its president and known to many of its officers. He recounts here some items of I.C. history which had an important influence on his state and salutes the 100-year-old corporation as a useful servant of the Midwest.

The Illinois Central was an Illinois idea. It was conceived in my state, chartered by its government, and built in part from funds obtained by the sale of grants of land in Illinois. It operates more miles of line here than in any of the 14 states through which it runs—about 30 per cent of the total—and earns more revenue here than in any other state. About 19,350 of its employees—48 per cent of the total—are residents of Illinois.

These facts alone would be sufficient to warrant these observations about this vigorous old centenarian. But there are others. My state is *the* railroad state. We have more miles of railroad within our borders than any state in the Union except Texas, and that proud commonwealth has the obvious advantage of sheer bigness. Against its almost 16,000 miles of railroad, we have 12,000—and we're only one-fifth its size. Chicago is unchallenged as the railroad center of the world.

The history of the Illinois Central is filled with interesting events and personalities. Big men had a lot to do with the railroad—men like Abraham Lincoln and Stephen A. Douglas in the old days, and like William Averell Harriman in our town time. The Central was the first federal land grant road in the country. In attracting settlers from the East and from Europe, in selling land, in encouraging good farming methods, in expanding markets for the people living along its lines, it became the model for a host of other railroads.

The development of the I.C. closely paralleled that of the state itself. The Central pioneered in various agricultural and commercial promotions which helped to shape and build the economy of Illinois. It conducted the first extensive geological survey in the state, opened the first shaft coal mine, and sponsored the first state fair in 1855. In later years it has had a major role in encouraging import-export traffic between the midland states and the Latin American countries through the port of New Orleans.

The Central was a tremendous engineering achievement. It represented perhaps the most stupendous physical undertaking yet conceived in its day. It was big not only for underpopulated Illinois, it was the biggest thing in the country; 705 miles of charter line to be built at one stroke, north and south through a prairie wilderness. To carry it out, contractors had to "import" into Illinois more than 100,000 men. Many came from the old countries of Europe, and ultimately settled here. Their people are good Illinoisans today.

The Central has since pushed on into 13 other states, to become "The Main Line of Mid-America." These states, with Illinois, form a great and growing region. Industrial expansion in this region has outstripped that of other portions of the country. The Illinois Central has played an important role in that growth.

THE "SOUTHERN" POINT OF VIEW, BY A MAYOR

deLESSEPS S. MORRISON is the mayor of New Orleans—a city which is just "recovering" from its famed Mardi Gras. Third largest city on the Illinois Central system, New Orleans is its greatest port and the southern terminus of its main stem. The city's 37-year-old mayor here sets forth a statement compounded of statistics, history, and admiration.

The City of New Orleans salutes the Illinois Central on its 100 years of transportation achievement. It can well be said that New Orleans and the Illinois Central grew up together. The ocean gateway of the Mississippi Valley and the main railroad of that valley have contributed richly to the mutual growth of each other.

Almost from the beginning of its existence, the Illinois Central has maintained traffic offices in New Orleans. It had an early contract with a line of steamboats to provide regular service between New Orleans and Cairo, Ill., thence rail to Chicago. The New Orleans, Jackson & Great Northern, organized in 1852 to push

its lines around the western shore of Lake Pontchartrain northward into Mississippi, is now part of the I.C., and for years was the main rail line tying New Orleans with the rest of the country.

The I.C. is thoroughly equipped with facilities to give New Orleans good rail transportation service. It has seven freight yards in and around the city to handle our import-export business as well as the flourishing domestic business carried on nationwide by our commercial and manufacturing firms. As the railroad that handles almost one-third of the total inbound and outbound freight, the I.C. is an integral part of the economic life of New Orleans. In turn, the volume of tonnage this railroad receives at New Orleans represents nearly one-sixth of the I.C.'s entire freight receipts.

The passenger service offered by this railroad—particularly the famous "Panama Limited" and the swift "City of New Orleans" — has long been enjoyed in the Crescent City. I.C. trains have brought to our city thousands of visitors to become acquainted with the Old World charm of our courts and gardens, and numerous businessmen to see at first hand the busy tempo of our commercial life.

The City of New Orleans is proud to say to the Illinois Central: "Well, done, Main Line of Mid-America!"

APPRAISAL BY A RAILROAD PRESIDENT

When RALPH BUDD retired as president of the Burlington lines on September 1, 1949, he was the accepted "dean" of railroad presidents, for he had served 30 full years as president successively of two large railroads — the Great Northern and the C.B. & Q. He has long been noted as a keen student of railroad affairs everywhere in the world, with a wide-ranging curiosity extending far beyond the companies he headed. He has taken time from his duties as chairman of the Chicago Transit Authority to set down these observations on the Illinois Central.

Historically, the Illinois Central is a wonderful example of the evolution of transportation. In the early days of the Midwest, most railroads were projected as portages—to fill the gaps in trade routes where water transportation was not complete or was unduly circuitous. The I.C. was a far more ambitious project, developed not so much as an adjunct to water transport as it was a device for opening up the entire central land mass of Illinois. Even so, its southern terminus was at the junction of the Ohio and Mississippi rivers and its northern was to be at the head of navigation on the Fever river near the northern boundary of the state at Galena.

The I.C. early learned the truth that, to be successful, a railroad must develop both through and long traffic. The Central's original main stem running through the center of the state north to Freeport crossed the Burlington at Mendota. Before the "Chicago Branch" of the I.C. was completed, there was developed for both the Burlington and the I.C. a profitable through interchange business to and from Chicago via that junction, which impressed on the Central the necessity of serving Chicago by its own rails as soon as possible.

I have known the I.C. both as a keen competitor—particularly for coal traffic—and as a good connection. I have always been struck by the fact that the Central traditionally has had a denser traffic on its main line than any of the Western transcontinentals and heavier than the Burlington. It is just what its slogan says: "The Main Line of Mid-America." For some reason, the railroad is not so well known for its line west from Chicago to Omaha and Sioux City. In the course of one of my favorite mental exercises—the study of population trends —I discovered, to my surprise, that the main line of the I.C.-West serves points between Chicago and Omaha that have a greater combined population than those served by any other railroad, except the Rock Island, which passes through Des Moines and the Quad cities—Davenport, Rock Island, Moline and East Moline.

The biggest recent accomplishment of the I.C., in my opinion, is its building up, in the past 20 years, of its Illinois coal traffic from "competitive" mines so that its trend of coal tonnage has countered that of the railroad industry on the average. That success is based on a number of factors, some of them complicated, but I may say that I admire such management for its aggressiveness.

I am particularly impressed by the intensive, intelligent and persistent public relations program of the I.C. It is sound, progressive and "in character" with the position and responsibilities of the railroad industry.

President Wayne Johnston is a case of the right man at the right time. When I learned of his appointment as president in 1945, I remarked to my associates, "He'll *operate* the property and do it well."

INVESTOR VIEW OF I.C.'s FINANCIAL REHABILITATION

PAUL BERGER is a partner in Security Supervisors, of Chicago, a firm which manages investment accounts for an impressive list of individuals and institutions, including several large insurance companies. It acts also as managing agent of Selected American Shares, Inc., a mutual investment fund with assets of approximately $19 million. Mr. Berger has been in the investment business since 1920, having had experience both in selling investments and in analyzing them, with Halsey Stuart & Co. and the then Merrill Lynch & Co. Although his counseling field is broader, he finds his chief specialty in railroad securities and a personal delight in studying railroads as railroads. He is a past president of the Railroad Securities Club of Chicago.

As the Illinois Central celebrates its centennial, it also can be proud of a major financial rehabilitation that is almost completed. Near-term bond maturities no longer present a problem and current resources are ample. On October 31, the company had cash and cash equivalent of $86.2 million, and net current assets of $44.5 million. Its junior bonds, the debenture 4¾'s, are selling at par.

The rehabilitation of I.C. credit is an accomplished fact, and it should be possible before too long to restore the stock to its former high standing and thus complete the task that developed out of the depression of 20 years ago.

The I.C. had an unbroken dividend record on its common stock from 1860 through 1931, and for the 14 years, 1917-1930, the dividend rate was $7 per share. In the six years, 1924-1929, the stock never sold below par, and in each of the six years, 1925-1930, the stock sold above 125, with a 1929 high of 153½. Obviously there was no question about quality of bond credit during this period, and the junior debenture 4¾'s had a price range of 92 to 102¾ from issuance in 1926 through 1930. But in two years the impact of the depression made a radical change; the debenture 4¾'s dropped from a 1930 high of 102½ to a low of 19 in 1932; and the common stock dropped from a 1930 high of 136¾ to a low of 4¾ in 1932.

In the four years, 1926-1929, income was fairly constant, with revenue at around $180 million, balance for fixed charges about $32 million to cover fixed charges of about $18 million, and annual net income of about $17 million in 1925 and 1926 and about $13 million in 1927-1929. In 1932, in contrast, revenues were $89 million (less than half those of 1929), and balance for fixed charges $14.4 million, or less than the fixed charges of $17.9 million, and there was a net income deficit of $3.5 million. In the five years 1931 through 1935, the total deficit was $19.8 million.

Management cut expenses (maintenance from $63.9 million in 1929 to $24.8 million in 1932; transportation from $64.5 million in 1929 to $34.2 million in 1932), but there was an inevitable time lag before adequate adjustment could be made to the precipitate drop in revenue. The maintenance ratio, which was 35.9 in 1929, was 27.9 in 1932, and 27 in 1933. The transportation ratio, which was between 35 and 36 for the five years 1925-1929, jumped to 40 in 1931, but by 1933 was down to 36.1. This was accomplished by removing trains and otherwise cutting down service in line with the reduced volume of business. Expenses were cut and the company learned to survive on a starvation diet in revenue. But it could not become really healthy until there was larger volume; revenues never exceeded $115 billion until 1941.

Struggle for Solvency

The depression was sudden and unexpected and the I.C. wasn't well prepared to meet it. At the end of 1929, net current assets were only $6.2 million. Although most of its funded debt did not come due until after 1950, there was an issue of $8 million 6½ per cent 15-year notes due in 1936. In June of 1931, the road borrowed $20 million on 3-year 4½ per cent notes to take care of its pressing cash needs. To conserve cash no dividends were paid on either the preferred or common stock from 1931 until recent years. In July 1932, to meet interest payments then due and other obligations, there was a loan of $11 million from the Reconstruction Finance Corporation, on a three-year note.

When the $20 million of 4½ per cent notes came due in June 1934, an arrangement was made to pay 37½ per cent in cash and extend 62½ per cent for three years at 6 per cent. These notes were paid at maturity by additional borrowing from the R.F.C. By June 1938 total borrowing from the R.F.C. amounted to $35 million, but there was then no more publicly held short-term non-equipment debt. In this period, when one-third of the railroad mileage in the country went into receivership, the Illinois Central had serious difficulties. But the management made a fight for corporate survival, risked pledging almost all its free assets to secure R.F.C. loans, and ultimately *had the satisfaction of avoiding receivership and working out the hard way.*

Adequate traffic volume and revenue afford a cure for most railroad ills. Beginning in 1941 the Illinois Central had a big increase in revenue—from $114 million in 1940 to $142 million in 1941, $213 million in 1942 and a wartime peak of $259 million in 1944. In the postwar adjustment there was a drop to $211 million in 1946 and then an increase to an all-time high of $268 million in 1948, and probably a new high of about $270 million in 1950. Increased revenue was reflected in increased net income, about $25 million in each of the two war years 1942 and 1943, and since the postwar low of $7.5 million in 1946 net income in any year has not been less than $15 million.

The decided improvement in earnings, starting in 1941, gave the management the opportunity to improve the property and to pursue an aggressive policy of debt reduction. From December 31, 1934, through 1941, debt had been reduced only about $11 million. But, in the six years, 1942 to 1947, inclusive, the road reduced its debt by $139 million. Fixed charges which were $17.4 million in 1934, were reduced to $10.7 million in 1947 and probably to about $10.1 million in 1950. Consolidated net current assets were never as much as $18 million at any year-end through 1940. In contrast, they have never been less than $30 million at any year-end beginning with 1942.

The present fixed charges would have been earned in every depression year except 1935 and with that exception they would have been earned at least 1.4 times. A reduction of $7 million in annual fixed charges would have changed the deficit of the five-year period, 1931-1935, to a profit.

Not only has debt been reduced but a difficult maturity problem has been solved. There had been outstanding about $190 million of debt maturing from 1950 to 1955, inclusive, and most of these bonds were non-callable. By July 31, 1949, these maturities had been reduced to about $81 million by repurchases. Then, in September 1949, an exchange was offered into new long-term consolidated mortgage bonds, and, by April 1950, about $28.8 million of short-term bonds had been exchanged. Thus, the bonds maturing through 1955 have been reduced to an amount that unquestionably can be handled out of earnings and current assets—if they are not refunded.

Conclusion

The Central no longer has a maturity problem; its present debt and fixed charges are moderate even in relation to the low earning power in the depression of the thirties; its most junior bonds, the debenture 4¾'s, are selling at par. The financial rehabilitation of its credit has been completed.

Its stock has not yet regained its predepression standing, but its position is much improved. Dividends were resumed on the preferred stock in 1948 at the full $6 rate. In 1950, dividends were resumed on the common stock with payments of $3 per share out of earnings of about $16 per share. Net income in the four years, 1947-1950, was about 34 per cent greater than it was in the four years 1926-1929, when dividends of $7 per share were being paid. The property is believed to be in good physical condition. Thus a solid foundation has been established. If good earnings are maintained, as now seems probable, and if dividend payments are commensurate with such earnings, it should not be too long until the position of the equity owner, like that of the creditor, will have been fully restored.

A SHIPPER'S POINT OF VIEW

RALPH C. KINTZ is traffic manager of the 68-year-old Peabody Coal Company, with headquarters at Chicago. Peabody ranks third among the country's producers of bituminous coal and is an important user of Illinois Central freight service. Mr. Kintz, once a railroad man, has been in Peabody's traffic department for 32 years, handling general traffic. Here are his views on the Illinois Central.

Everybody knows that the relationship between the coal industry and the railroads of the country is one of closest intimacy. Our interests are mutual—so are our troubles. This mutuality of interest is particularly strong between the Illinois Central and the coal producers who ship over its rails because that railroad—one of the country's largest coal carriers—is keenly interested in coal traffic and has, in the last few decades, greatly improved its relative position as a coal carrier. Roy Barr, its traffic vice-president, spent 15 years in the coal business, in between bouts of railroading. He is well known and much respected in the coal trade.

It has been demonstrated in the recent past that neither the coal nor the railroad businesses are static and that they grow and modernize together. Recently our company opened a fine new modern mine at Pana, Ill., served jointly by the Illinois Central, Chicago & Eastern Illinois and the New York Central. This mine is now producing about 7,000 tons a day, which will increase, within a few months, to about 9,000 tons rated-capacity. The three railroads have had an important role in this new venture and had to build tracks to serve the tipple. On its part the I.C., I understand, is undertaking to construct a long working track parallel with its main line for handling its proportion of the 200 cars a day which this mine will ship out.

We who are engaged in the work of producing and selling coal have a vital interest in certain features of railroad service. Perhaps these days our main worry is an adequate supply of cars. Currently the supply furnished by the I.C. is above the average. We are also interested in a steady, reliable flow of deliveries to our customers, coinciding with the rate of shipment, even though speed, as such, is not as important as it is, say, in the perishable trade. So-called "bunching" of cars hurts us badly in customer relations. Some coal-using industries have limited track space and almost no storage facilities. If, for example, they have room for but two cars, they want to receive two cars a day — not eight cars three days later.

The I.C., over the long pull, does a good job for us in this respect. Since the facilities of customers vary widely in character, we have need of a versatile supply of coal cars — drop bottom, hopper, low side "gons," and high sides.

The I.C.'s car fleet has the variety we need. And if, by chance, we have to divert or reconsign because a particular shipment cannot be accepted by the customer, the I.C. has the staff and communications with which to accommodate us.

THIRTEEN TIMES 'ROUND THE WORLD ON THE ILLINOIS CENTRAL

L. S. TIFFANY, chairman of the board of the 75-year-old firm of O. W. Richardson Rug & Furniture Co. in Chicago, has commuted steadily on the Illinois Central for 62 years. The 83-year-old businessman was made Number One Member of the road's new Half Century Commuters' Club in a special ceremony in December 1949. Here is what he has to say about the past and present.

I married twice in the year 1889; first I wed my wife; then married the Illinois Central surburban service. When we took up housekeeping in an apartment at 5100 Lake Avenue, in the Hyde Park section of Chicago, my 62 years of commuting to and from my work at O. W. Richardson's began. I first used the old Madison Park station (between 50th and 51st sts.).

In 1895 I bought a large home at 7140 Euclid avenue, in the South Shore district, where I still live today. The Bryn Mawr station (then called Jeffrey avenue) is only 400 ft. from my front door. My daily fare per trip, when I started commuting to 43rd street, was about 6½ cents. It was 10 cents to Bryn Mawr. Now my fare to Bryn Mawr, for a much faster and cleaner ride, in an age of inflation, is about 19 cents.

Electrification of the suburban service in 1926 was, of course, a great boon to the commuter and to real estate all along the line. Towns almost complete in themselves grouped around many suburban stations. But I can't remember that we thought unkindly of the old steam trains. They were comfortable and reliable. Indeed, I recall that only in the blizzard of '88 and the big snow of 1918 did the trains fail to get through. The I.C. did a wonderful job of mass handling in the World's Fair of 1893, when it fitted up freight cars with compartments and side doors which shuttled non-stop between the viaduct at Van Buren street and the entrance to the fair grounds at 63rd street. The trolleys and bicycles did their part, of course, but the I.C. performed the yeoman job on such occasions as "Chicago Day," when 800,000 people visited the fair.

My experience with I.C. passenger service is not limited to commutation. When my children were young, we wintered occasionally at Pass Christian, Miss., or Gulfport, east of New Orleans along the Gulf. We remember our rides on the "Panama Limited" and other long-distance trains with pleasure and nostalgia. Among other things, long live Illinois Central shrimps.

In my 62 years' almost daily experience with them, I have found I.C. trainmen uniformly polite and helpful. Suburban crews have always had a fine *camaraderie* which shows itself in their dealing with passengers. I've ridden on I.C. suburban trains the equivalent of 13 times around the world, even though my daily journey has been relatively short. I'd say it always was, and is today, a wonderful service.

The Illinois Central Heritage —1851-1951

BY WAYNE A. JOHNSTON
President, Illinois Central

On February 8 at New York, the president of the 100-year-old Illinois Central presented an address before the members of American Newcomen, a body devoted to the history of great business institutions and men, on the occasion of the National Newcomen Dinner. This article is made up of those portions of his paper which relate to the history of the railroad.

Upon entering the National Archives Building in Washington, where the priceless records of the American commonwealth are stored, one encounters this arresting inscription:

"The Heritage Of The Past Is The Seed That Brings Forth The Harvest Of The Future."

Tonight, as we meet in the city of New York to celebrate the centennial of the Illinois Central, we are keenly aware of our great heritage and of the responsibility which rests upon us as the custodians of that heritage to preserve it for those who will follow us. Recalling the problems and achievements of those who have gone before us and reviewing the progress of the great public service institution which they delivered into our hands, we are fired with determination to preserve our system of free enterprise and the American way of life. If these inspiring influences were not present, then, as I see it, an observance such as this would be meaningless.

Eventful Decades

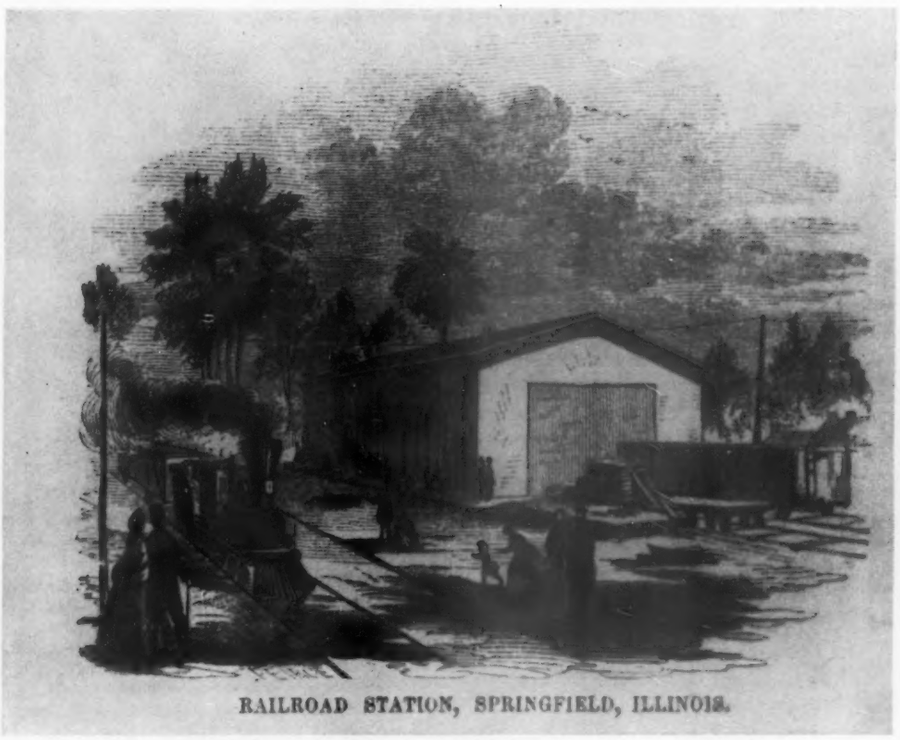
The Illinois Central Railroad, with its network of steel in 14 states of Mid-America, is an integral and important part of the nation itself. Therefore, to understand the full meaning of the observance for which we are here assembled, we must encompass the entire view of American growth and development, agriculturally, industrially and commercially, during the last hundred years. We must review in that perspective the extraordinary changes which have occurred in this country since 1850, when four-fifths of its area was in its primitive state, and when there were fewer people in the United States than there are today in its four leading metropolitan centers. What has occurred in this country during these ten eventful decades is without precedent or parallel in the history of mankind. In every material way, our progress as a nation has been extraordinary and dramatic.

In 1850 there were 9,000 miles of railroad in this country. These railroads were located for the most part in the Atlantic seaboard states. Many of them were built of wooden rails capped with strips of iron. The wood-burning locomotives of that period and the wooden cars were small and light. From those crude beginnings the railroads multiplied and expanded until the rail network reached into every state and nearly every city and town and farming community across the country. Every one of these railroads has contributed its part to the making of our nation.

It has been said that the history of the Illinois Central is the history of Mid-America. The truth of this statement is evident in the striking fact that of all the thriving cities and towns which now line the 921-mile line of the Illinois Central between the Great Lakes and the Gulf of Mexico, only seven were on the map when the Illinois Central was organized one hundred years ago. At the southern extremity of the route was New Orleans, metropolis and chief seaport of the South, with a population of 116,000. At the northern extremity, on Lake Michigan, was Chicago, but little more than a frontier trading post, with a population of less than 30,000. Between Chicago and New Orleans, the only communities of any importance were: Cairo, Ill., with 242 inhabitants; Memphis, Tenn., with less than 9,000; Hernando, Miss., with less than 1,000; Canton, Miss., with two or three hundred; and Jackson, Miss., with about 2,400. The combined population of these seven cities and towns (Chicago, Cairo, Memphis, Hernando, Canton, Jackson and New Orleans) was then only about equal to the present population of Jackson. Between these seven cities and towns are numerous thriving industrial and commercial centers which sprang up as a result of the coming of the railroad.

Elsewhere the transformation was equally striking. In Iowa, for example, the lines of the Illinois Central were pushed through virgin territory. Over the entire route from Dubuque to Sioux City not one of the many thriving cities and towns which now line the railroad was on the map in 1850.

The Illinois Central and its acquired lines were the



RAILROAD STATION, SPRINGFIELD, ILLINOIS.

EARLIEST STATION IN Illinois' capital city, as shown in an illustration from a book

pioneers, the trail-blazers; they paved the way for the settler, the farmer, the industrialist, and the merchant. They created markets and other conditions which were favorable to agricultural and industrial growth and prosperity. The Illinois Central, with its network of lines extending east and west, north and south, became the "Main Line of Mid-America," bringing to the people of its territory regular year-round transportation. Through local employment, purchases and taxes, the railroad has also contributed to the upbuilding of the region which has become the economic heart of the nation.

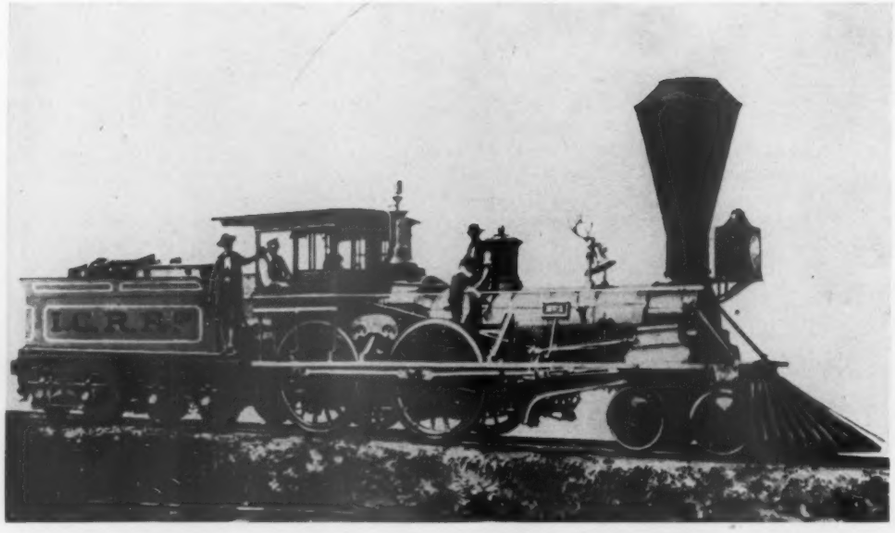
First Land Grant Road

The Illinois Central was the first railroad in the United States to be authorized, located and promoted by the federal government. It was projected by the Congress of the United States, not as a system of transportation local to Illinois but as the central trunk or grand stem of a system of railroads which ultimately would connect the rail thoroughfares of the entire country. Today, the Illinois Central with its 6,500-mile network has physical connections with nearly every railroad that reaches into Mid-America. Its relationship to the great continental network of railroads is such that nearly every ton of freight that moves across the country either passes over or crosses its line at one or more points.

Proposals for the Central Illinois railroad project were before Congress for many years. The project received the support of such outstanding statesmen as Henry Clay, John C. Calhoun, Daniel Webster, Abraham Lincoln, Thomas H. Benton, Stephen A. Douglas, Jefferson Davis, and Samuel Houston. Finally, in the closing days of the 31st Congress, in September 1850, largely through the efforts of Senator Stephen A. Douglas of Illinois, Congress passed a measure granting to the state of Illinois some 2½ million acres of the 11 million acres of public lands in the state. These lands had been on the market for years without purchasers at $1.25 an acre. Fertile as the lands were, they were virtually worthless without railroads to make them accessible. By this grant to the Illinois Central, remaining public lands not only soon had eager buyers and a doubling in price but, what was more important at that time, a real start was made in the development of the state to what it is today.

The Land Grant Act of 1850 was one of the milestones in American history. It established a new national policy with reference to the development of the public domain and the encouragement of railway building in the unpeopled regions of the West. Its effect was far-reaching. During the next two decades, the United States government made similar grants to aid in development of railroad lines which became parts of such great present-day systems as the Southern Pacific, the Union Pacific, the Northern Pacific, the Burlington, the Chicago & North Western, the Rock Island, and the Santa Fe. Thus the government created a ready market at advanced prices for millions of acres of unoccupied lands, and the great West was opened for colonization and industrial development. What has occurred since then in the region beyond the Mississippi forms an amazing chapter in our history.

The original Illinois Central was 705 miles in length, extending from Cairo, the southernmost point in Illinois, through the heart of the state to the lead mines of Galena and on to Dunleith on the Mississippi river, in the extreme northwestern corner of the state, with a branch to Chicago on Lake Michigan. When Congress passed the Land Grant Act, no railroad of such magnitude as the proposed Illinois Central then existed in America. It would cost millions to build. The state of Illinois was heavily in debt and on the verge of bankruptcy. The doors of every bank in the state were closed. Neither the state nor any of its citizens was in position to finance



OLD NUMBER ONE, first locomotive on the Illinois Central

CHICAGO TERMINAL station at South Water street, in 1866

the undertaking. Therefore, Illinois was compelled to look elsewhere for the needed capital. As early as January 1850, more than a year before the Illinois Central was incorporated, Senator Douglas had been in contact with a group of Eastern business men, of whom Robert Rantoul, Jr., a distinguished lawyer and statesman of Massachusetts, became the spokesman. The Rantoul group, as it was called, worked in close cooperation with the governor of Illinois and other state officers in formulating the charter which, after months of discussion, debate, and maneuvering, was granted by the state of Illinois on February 10, 1851.

The charter contained certain unique provisions. One was that, in lieu of other taxes, the railroad should pay into the state treasury 5 per cent of its gross revenue plus a state tax which has had the effect of making the total 7 per cent of gross earnings on the charter lines. Another provision was that the governor of Illinois should serve ex officio as a member of the board of directors. Under the Federal Land Grant Act, as later interpreted by the courts, the railroad was required to transport government troops and property at 50 per cent of standard rates.

The Illinois Central Railroad Company might be said to have more than one birthplace. Some would contend that the railroad was born in Washington, D. C., where the Land Grant Act was passed and signed. Others would maintain that the true birthplace of the road was in the old state capitol in Springfield, where the road was chartered. Still others would be of the opinion that the real birthplace of the company was in "a small and dimly lighted room" at the corner of Hanover and Wall streets in the city of New York, a site now occupied by Brown Bros. Harriman & Co. Here, on March 19, 1851,

about five weeks after the railroad received its charter, met the incorporators of the Illinois Central Railroad Company. The company was organized at this meeting, its first board of directors and its first officers were elected, and the body corporate formally accepted the terms of the Illinois charter. Thus the Illinois Central was launched upon its career under the leadership of a coterie of business leaders of outstanding accomplishments.

In addition to Robert Rantoul, Jr., of Massachusetts, who was associated in law practice with Daniel Webster and succeeded him in the United States Senate, the group included such men as: David A. Neal, president of the Eastern Railroad of Massachusetts; Gouverneur Morris, railway promoter and son of Gouverneur Morris of Revolutionary War fame; William H. Aspinwall, New York merchant, builder and first president of the Panama Railroad; Franklin Haven, Boston financier; and Henry Grinnell, New York merchant and chief backer of Arctic expeditions.

Referring to the founding fathers of the Illinois Central, William K. Ackerman, an early president who was identified with the company from its earliest years, once wrote: "Probably no body of incorporators, or directors as they afterward became, was ever filled with more earnest determination, confident reliance, pride of undertaking, and honesty of purpose."

Securities Sold Abroad

Although most of the incorporators were men of large means, as wealth was measured in their day, even their pooled resources were by no means sufficient to carry the great Illinois Central project forward to completion. When it was found to be out of the question to raise the necessary millions to finance the construction of the railroad in the United States, they sought to market their securities in London and other financial centers of Europe.

Commencing with a five million dollar bond issue floated in London in 1852, the holdings of European investors in Illinois Central stocks and bonds increased rapidly. Within a few years a majority of the company's stocks and bonds was held in Great Britain and elsewhere in Europe, and for nearly half a century, until around the turn of the century, European investors held a controlling interest in the company.

On the lines of the railroad in Illinois are at least three cities and towns which were named for Englishmen who were closely associated with the company in its early years. Cobden was named for Richard Cobden, the distinguished British statesmen and economist, who invested most of his personal fortune in the Illinois Central and visited Illinois repeatedly to examine the property. In the darkest hours of the 1857 panic, Cobden did much to restore and bolster confidence in the Illinois Central among the British investors. Heyworth was named for Lawrence Heyworth, who invested approximately a million dollars in the company, and Paxton was named for Sir Joseph Paxton, the distinguished English horticulturist and architect, who was a prominent stockholder and also active in the colonization of Illinois Central territory. Many other noted Englishmen were holders of Illinois Central securities in the early years of the company, among them William Gladstone, the great premier.

Numerous Englishmen visited Illinois in that period and toured the railroad. In 1856, a correspondent in the Illinois Central office at Chicago wrote: "Honorable Lords and Members of Parliament are so plentiful here these days that I keep a copy of Burke's Peerage and the Blue Book on the same shelf as the English dictionary and other books of ready reference."

When its original lines were completed in 1856, the Illinois Central was the longest railroad in the United States under one management. Because of the prominent place which it occupied in the transportation world, the Illinois Central attracted many distinguished men to its service. Abraham Lincoln was an Illinois Central man. As a member of the Illinois general assembly, he had exerted his influence in behalf of a Central Illinois railroad as early as 1836. While the railroad was under construction he became an attorney for the company in 1853, and he continued in that post until his nomination for the presidency in 1860. Lincoln represented the Illinois Central in numerous cases before the circuit courts and several cases before the Supreme Court of Illinois. Two of the supreme court cases were among the most important cases in the history of the railroad, both involving basic questions of taxation. The largest fee Lincoln ever received during his professional career was five thousand dollars, paid him by the Illinois Central in an important tax case which was carried to and argued twice before the state supreme court.

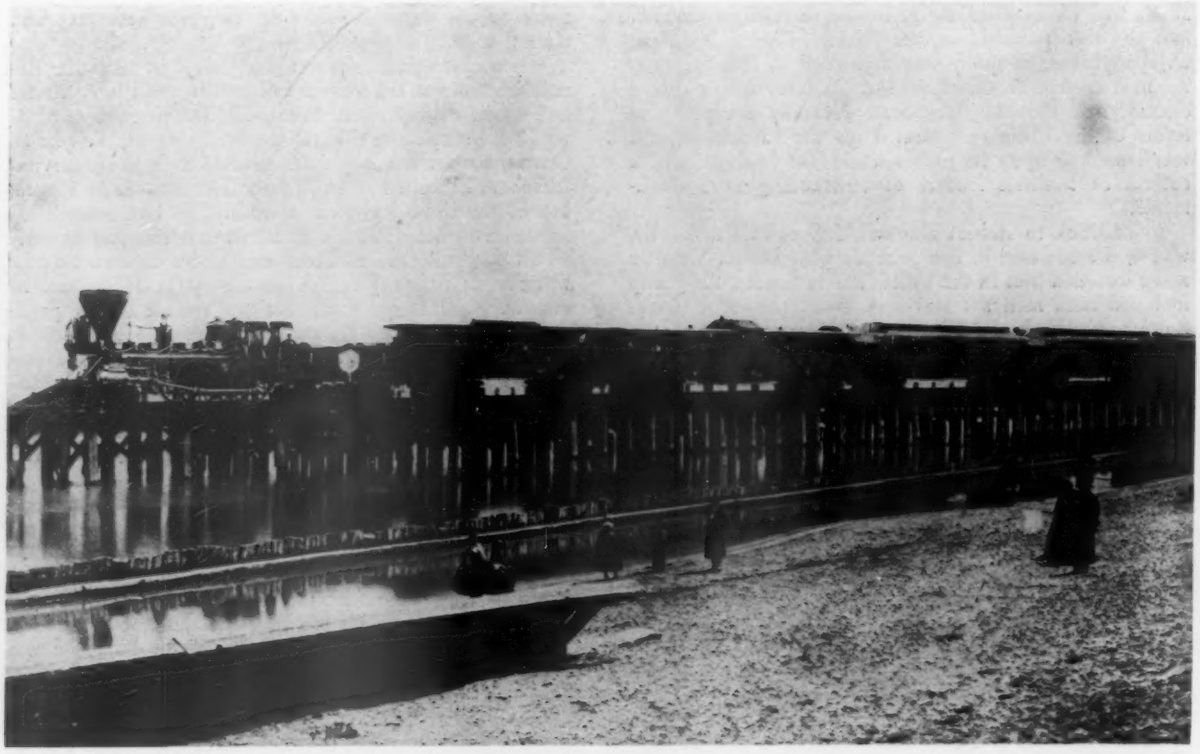
Several distinguished military men of the Civil War era were associated with the early railroad. Gen. George B. McClellan was chief engineer and later vice-president of the Illinois Central. Gen. Ambrose E. Burnside was successively cashier and treasurer of the Illinois Central prior to the war and a director of the railroad after it. Gen. Grenville M. Dodge, chief engineer in charge of the construction of the original line of the Union Pacific, began his brilliant railroad career with the Illinois Central. Gen. Nathaniel P. Banks, a governor of Massachusetts and speaker of the House of Representatives, was resident director, an office comparable with that of vice-president. Col. Roswell B. Mason, who had helped build the Erie Canal, was the chief engineer in charge of the construction of the original lines of the Illinois Central. Sir William C. Van Horne, builder and later president of the Canadian Pacific, was another who began his career on the Illinois Central.

Prominently identified with the early history of lines which the Illinois Central acquired south of the Ohio river were such men as Gen. P. G. T. Beauregard, the famous Confederate military leader; Collis P. Huntington, one of the organizers of the Central Pacific and Southern Pacific systems, and L. Q. C. Lamar, United States senator and secretary of the interior in the cabinet of Grover Cleveland.

Among the outstanding men who directed the affairs of the Illinois Central in its formative years, none deserves a higher place than William Henry Osborn. Mr. Osborn was a commanding figure in the affairs of the company from 1854 to 1883, a period of 30 years. He was president of the company from 1855 to 1865, years which included the panic of 1857 and the Civil War, a most critical period in the railroad's history. Upon the shoulders of William H. Osborn more than upon those of any other man of that period, fell the responsibility of steering the railroad through some of its most difficult times and of setting its course for the future.

Growth Speedy

The growth of Illinois as a result of railroad development was truly astounding. In a period of ten years, from 1850 to 1860, the population of the state more than doubled, and that of Chicago more than trebled. During this period thousands of new farms were established in Illinois as the wild prairie land was put under cultivation. Coal mining became one of the state's important indus-



LINCOLN'S FUNERAL TRAIN on the road's original main line along Chicago's lake front, 1865

tries. Quarries were opened. Land values increased astonishingly. Numerous mills and small factories — forerunners of the great industrial plants of today — came into being.

Although for the first 16 years of its corporate life the Illinois Central was strictly an Illinois railroad, it had been keenly active in developing trade through its connections at Chicago, Dunleith, Cairo and elsewhere, with emphasis upon the port of New Orleans. Almost from the beginning of its existence, the railroad maintained traffic offices in New Orleans. By 1858 it had contracted with a line of steamboats to provide regular service with through rates and fares between Cairo and New Orleans. When railway service was established between Columbus, Ky., and New Orleans early in 1860, the Illinois Central entered into close traffic alliances with the rail lines also. But no sooner had the railroad made a good start toward building its trade with New Orleans through its rail and steamboat connections than the nation was plunged into a devastating war.

All rail communication with the South was severed overnight, and the currents of traffic over the Illinois Central were drastically altered. During the Civil War the Illinois Central was of vital importance to the government from a military standpoint. The lines between Chicago and Cairo and between Dubuque and Centralia were taken over largely by the military establishment and became the routes of the armies, soldiers, foodstuffs and military supplies going south and returning soldiers and hospital trains going north.

After the war, rail and steamboat connections with New Orleans and other points in the South were reestablished, and the Illinois Central entered upon a program of expansion beyond the borders of the state. In 1867 it crossed the Mississippi river and extended its operations into the newly opened Iowa country. By 1870 its lines had been extended to the Missouri river at Sioux City.

Then, in 1872, through the initiative of William H. Osborn, the company took a momentous step. It entered into an agreement with connecting lines in the South which ultimately extended its operations to New Orleans. By 1877 the Illinois Central was in control of the New Orleans line, as well as branch lines in Mississippi. In the next five years these southern lines and their equipment, which had suffered the ravages of war, were completely rebuilt by the Illinois Central.

Until 1881 the interchange of passenger and freight cars between these northern and southern lines was impeded by the fact that the gage of the lines north of the Ohio river was 4 feet 8½ inches (now the standard gage) while that of the lines south of the river was 5 feet. In that year, in a matter of hours one day, the gage of the entire line from East Cairo to New Orleans, a distance of 547 miles, was converted to standard. This enabled both locomotives and cars to be interchanged freely. Two years later the company began operating the Southern lines as a part of the Illinois Central system. The opening of the great bridge across the Ohio river at Cairo, Ill., in 1889 completed the last link in this Lakes-to-Gulf rail route. The Cairo bridge symbolized as perhaps nothing else did then or has since the reunion of the North and South.

Meanwhile, in 1888, the railroad had further expanded its operations by extending its lines as far west as Sioux Falls, S. D. Then in 1892 the Illinois Central came into control of a second line between Memphis and New Orleans through the heart of the fertile alluvial

I. C. SUBURBAN SERVICE was popular during the Worlds Fair of 1893, as at Van Buren Street station, Chicago

delta country of Mississippi, a line widely known for many years as the Yazoo & Mississippi Valley. In the middle nineties the company extended its operations in Kentucky and southern Illinois. Thus, step by step, the Illinois Central was being forged into a great railway system. By the end of the century it had a direct route between St. Louis and Chicago and had built or acquired lines into Peoria, Evansville and Omaha.

The acquisition of the lines in western Kentucky and southern Illinois during the nineties was of far more significance than might appear to the casual observer. Large areas served by these lines were underlaid with rich deposits of bituminous coal of good quality. The Illinois Central took steps to promote the development of these hidden resources, and by 1900 the company had taken its place as one of the foremost coal carriers of the nation.

Meanwhile, important changes had taken place in the management of the railroad. Upon the retirement of William H. Osborn at the close of 1882, two young men, Stuyvesant Fish and Edward H. Harriman, were moving into key positions, each to play a major role in the affairs of the company. In 1877 Stuyvesant Fish became a director and in 1887 president of the company, a position which he held for nineteen years, the longest tenure of any president in the railroad's history. Edward H. Harriman became a director in 1883 and vice-president in 1887. He resigned from the latter position in 1890 but continued as a director until his death in 1909.

During this middle period, from the early eighties to the early years of the present century, the policies of the company were largely shaped by these two men. Both masters of finance, Fish and Harriman worked as a team. In a period of 20 years, from 1880 to 1900, the mileage of the Illinois Central more than trebled, the number of units of equipment owned increased sixfold, the capitalization of the company increased fourfold, and traffic and earnings increased nearly fivefold. By 1900 the Illinois Central was a 5,000-mile system reaching into 14 states of the Middle West and South. The long association of Stuyvesant Fish and Edward H. Harriman in the management of the Illinois Central came to a decisive and dramatic climax in their contest for control of the company in the early years of the present century. This contest extended over a period of many months and culminated in the ouster of Mr. Fish from the presidency in 1906. Because of his other widespread interests, Mr. Harriman's victory not only made him the dominant figure in the affairs of the company; it also gave him a position of undisputed leadership in the field of railroad management.

Mr. Harriman continued in control of the Illinois Central until his death in 1909. Four years later, his elder son, William Averell Harriman, then 22 years of age, became a director of the company. The youngest director in the history of the Illinois Central, William Averell Harriman soon demonstrated that he had inherited his father's analytical mind and penetrating gasp of business problems. Later he became chairman of the Executive Committee, and for many years, until his withdrawal from business to devote his time and attention wholly to government affairs in 1942, William Averell Harriman was the key figure in the Illinois Central directorate. Although he has devoted his energies entirely to the affairs of goverment since then, he and his brother Roland Harriman still maintain a lively interest in the railroad which played such a prominent part in their father's railroad career. From 1883 until 1909,

a period of 26 years, Edward H. Harriman was an important figure in the affairs of the company. From 1913 until 1942, a period of thirty years, his son William Averell Harriman was an equally important figure in the company's affairs. Thus the influence of the Harriman family has extended over a period of considerably more than half the life of the company.

Charles H. Markham, one of the dynamic personalities in Illinois Central history, came to the presidency in 1911 and continued as the administrative head of the company until 1926, when he was succeeded by Lawrence A. Downs, son of a railroad section foreman. Mr. Downs remained at the head of the company until 1938, when he was succceeded by John Lansing Beven, son of an Illinois Central locomotive engineer. Following Mr. Beven's death in 1945, I was elected as his successor. It is interesting and I believe significant that the last four presidents of the Illinois Central have been natives of states in which the Illinois Central operates.

[Mr. Johnston then discussed important changes in the locale and membership of the road's directors and some of its pioneering achievements in traffic development, which are treated elsewhere in this issue.—EDITOR]

The Glorious Twenties

Following World War I, the Illinois Central entered upon one of the greatest improvement programs ever undertaken, involving expenditures exceeding $300 million. Included were the reconstruction of terminal facilities, the electrification of suburban service, the reduction of grades, the construction of secondary main and new lines, the reconstruction of repair shops and freight yards, and the expansion and modernization of motive power and rolling stock. When completed, the program had expanded the capacity and efficiency of the transportation plant, effected economies and provided improved service to the public.

During the twenties traffic was heavy and the railroad prospered. Then, commencing in 1929, came the great depression. In a period of four years, 1929 to 1933, more than half of the business and revenues of the Illinois Central disappeared. The situation was aggravated by the inroads of competition on highways and waterways. Never was the Illinois Central closer to the bankruptcy courts. So grave was the situation that papers were prepared for filing in a court of bankruptcy at a moment's notice, if and when such a desperate step seemed imperative. Through the most drastic economies ever undertaken, the company managed to survive the economic storm.

In retrospect the picture changes. Looking back we wonder if this period of adversity was not a blessing in disguise. The hard times resulted in the most thorough housecleaning in the history of the company. This searching examination and overhauling of all its methods made it possible for the Illinois Central to handle the unprecedented traffic of World War II. Indeed, had it not been for the beneficial lessons learned from the drastic economies which were necessary and for the great improvements which were made in plant and equipment during the 1920's and 1930's, the company would never have been able to perform the prodigious tasks of the war years 1942-1946.

[At this point Mr. Johnston discussed at length recent managerial achievements of the railroad, most of which are outlined elsewhere in this issue. He emphasized the reduction of debt.—EDITOR]

This noteworthy achievement [the reduction of funded debt] has been the result of years of concentrated effort on the part of the Illinois Central officers and employees and magnificent teamwork on the part of stockholders, bondholders, and management generally. It gives me great satisfaction this evening to acknowledge the special indebtedness of the company to the chairman of our Executive Committee, Eugene W. Stetson. For several years past he has devoted a large part of his time, thought and effort to working out, with infinite patience and discerning judgment, step by step, the multitudinous details of the refunding, consolidation and debt reduction program . . . .

Directors, Past and Present

Throughout its history, the Illinois Central has been fortunate in having boards of directors composed of business leaders of unusual vision and integrity. In addition to the incorporators already mentioned, and a long line of governors of Illinois, the board in past years has included such outstanding figures in American business and finance as: J. Ogden Armour, John Jacob Astor, Vincent Astor, William Waldorf Astor, John W. Auchincloss, Pierre Chouteau, Jr., James C. Fargo, Stanley Field, Stuyvesant Fish, Robert W. Goelet, Edward H. Harriman, Oliver Harriman, W. Averell Harriman, Abram S. Hewitt, James F. Joy, Robert S. Lovett, J. Pierpont Morgan, Levi P. Morton, James Norris, Jerome J. Hanauer, Charles A. Peabody, John G. Shedd, and Gen. Cornelius Vanderbilt.

These are a few of many outstanding men who have served as directors of the Illinois Central. But I doubt that any board of directors has been composed of an abler group of men than that which composes the board of directors of the Illinois Central in this year of its centennial. Let me call the roll:

Eugene W. Stetson of New York, formerly president and chairman of the board of the Guaranty Trust Company;

Gen. Clifford W. Gaylord of St. Louis, president of the Gaylord Container Corporation;

Stephen Y. Hord of Chicago, general partner, Brown Brothers Harriman & Company;

Oscar G. Johnston of Mississippi, organizer of the National Cotton Council of America;

William R. King of Memphis, president of the William R. Moore Dry Goods Company;

James R. Leavell of Ocean Springs, Miss., retired president of the Continental Illinois National Bank & Trust Co. of Chicago;

Donald B. Lourie of Chicago, president of the Quaker Oats Company;

John W. Rath of Waterloo, Iowa, chairman of the finance committee of the Rath Packing Company;

Adlai E. Stevenson, governor of Illinois, *ex officio;*

Edwin S. S. Sunderland of New York, member of the law firm of Davis, Polk, Wardwell, Sunderland & Kiendl;

Solon B. Turman of New Orleans, executive vice-president of Lykes Brothers Steamship Company;

Louis Ware of Chicago, president of International Minerals & Chemical Corp.;

Thomas E. Wilson of Chicago, chairman of the board of Wilson & Co., meat packers; and

Gen. Robert E. Wood of Chicago, chairman of the board of Sears, Roebuck & Co.

Every member of the present board is intimately acquainted with the Illinois Central, its territory, its personnel, its operations, its traffic, its financial affairs and its managerial problems. These are the gentlemen who meet frequently and act upon all major questions of policy affecting the company.

[There followed a brief tribute to the management and employees of the road.—EDITOR]

In a few hours the Illinois Central will enter upon its second century of service to the American people. Deeply conscious of our heritage from the past and of our obligation to the future, we are united in a determination to keep in the vanguard of progress and to seek in every way to justify the right of the Illinois Central Railroad to be called the "Main Line of Mid-America."

An outline of the policies, principles and practices which make the 100-year-old Illinois Central a successful enterprise

"MEN, Money, Materials —and Management"

President Wayne A. Johnston of the Illinois Central, in a recent address before the Economic Club of Chicago, declared: "An industry producing either goods or services is made up of four elements — men, money, materials and management. Fusion of the first three into a smoothly functioning organization is the task of management." Management, he continued, "must formulate the policies and see that they are properly administered, to the end that the product is pleasing and may be marketed at a profit." The Illinois Central is unashamedly interested in profit, along with a "pleasing product." It even said so in a booklet it handed out to suburban passengers last year explaining its plea for a fare increase. "We *are* concerned with profits. We believe it is the clean and healthful concern of most businesses and individuals."

"MANAGEMENT . . ."

Taking together 20 railroads having annual operating revenues in excess of $100 million a year, the I.C. — which is fourteenth in order of route miles operated — stands ninth in operating revenues; ninth in freight revenues; sixth in passenger revenues; eighth in net railway operating income; and sixth in net income. In the outstanding measurement of "ratio of transportation expenses to total revenues," the I.C. has consistently shown up, in the past nine years, better than Class I roads as a whole. In the first ten months of 1950, its transportation ratio stood at 35.7, compared with 37.2, the average of all roads — and this was despite the adverse effect of the coal strike early in 1950. In October 1950 (the latest month for which complete statistics are available), the I.C. came through with an even more favorable margin, the ratio being 31.7, compared with 34.0 for all roads.

After having suffered, not so long ago, from a top-heavy debt structure in relation to earnings, the I.C. in the first 10 months of 1950 earned its fixed charges 3.06 times after federal taxes, compared with 2.70 times by Class I roads as a whole. Last year the business magazine Forbes, after more than six months of concentrated study of the operations of 149 major corporations in 10 major fields — during which its staff interviewed interested outsiders, local residents and newspaper publishers, as well as employees, officers and stockholders of the companies themselves — rated the I.C. as the top railroad in its list. The survey of each company was made in five classifications: management, labor relations, public relations, community relations and stockholder relations. The I.C.'s composite score was 93. Only one company in the 149 studied had a higher general average.

In discussing the management of the railroad President Johnston often stresses the fact that the Illinois Central has never been wealthy — and has had, therefore, to forego the luxury of prima donnas. A visitor walking through the corridors of its general offices in Chicago will find the doors to the "private" offices of top executives wide open. That applies to the president's office, too. Mr. Johnston customarily answers his own phone, except when he has a visitor.

This "open door policy" of the I.C. is, in large measure, the outward manifestation of an inner conviction that open lines of communication within a company produce the best results. The railroad is open to ideas,

THE MANAGEMENT WHICH FUSES MEN, MONEY AND MATERIALS—President Wayne Johnston and most of his top staff (left to right): A. B. Huttig, treasurer and assistant secretary; G. M. Crowson, assistant to president; R. E. Connolly, former vice-president (accounting), now deceased; President Johnston; C. H. Mottier, vice-president and chief engineer; O. O. Albritton, vice-president (purchases and stores); C. F. Duggan, vice-president (operation); G. J. Willingham, director of personnel; and A. L. Church, who is the secretary and assistant to the president

THREE MORE MEMBERS OF TOP MANAGEMENT—(left to right): R. E. Barr, vice-president (traffic); J. H. Wright, newly appointed general counsel; and F. E. Martin, comptroller

open to inquiry, open to argument and open to inspection.

The mechanics of management of the I.C. are simple. President Johnston believes that "the typewriter is the ruination of corporations and the wastebasket God's greatest gift to the executive." The formal, periodical staff meeting is abhorred as wasting a lot of officers' time; the memo is repressed to the "proper function" of recording final decisions, registering figures and guiding action — "after the thinking has been done."

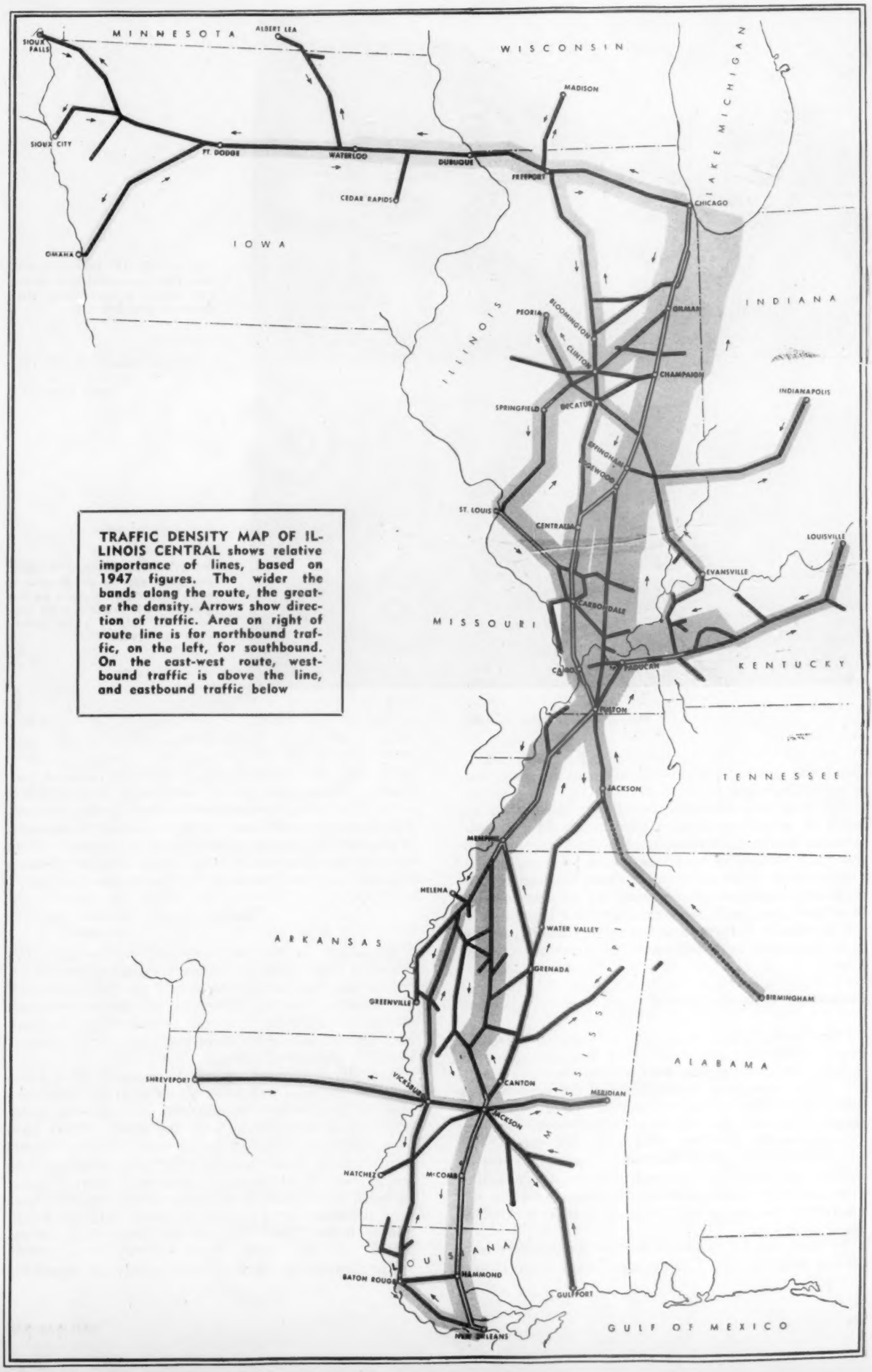
Thinking by Accretion

Ideas form on the I.C. like frost crystals on a window pane — by *synthesis* rather than by *analysis*. Except when an overriding consideration interferes — like money or policy set by the directors — majority opinion of the officers concerned usually determines the final decision. As President Johnston explains it: "If two of my officers disagree on a plan, I try to get a third to agree with one of them, then a fourth to join the circle, and so on until there is a clear preponderance of opinion. If, say, five officers disagree with me, I'm overruled. If four accept my position, the fifth man is overruled. I don't pay men good salaries to say 'yes'."

To illustrate his point, Mr. Johnston recalled that he didn't take kindly to the two twin-unit dining cars which the road ordered late last December; he still doesn't like the idea. But all of the other officers whose opinion is relevant thought the twin-unit layout attractive and efficient. Hence the I.C. will operate twin diners.

Ideas are "perambulated" about among the staff. Mr. Johnston, for example, may discuss a scheme with one department head; then go around the office sounding out other department chiefs for their slant. The net result may be that the first man is outvoted. This process is carried on in all echelons of management.

Getting the facts is an important part of the road's mechanics of management. "It is anybody's privilege on this railroad to come to me with ideas or for information," the president insists. "Similarly, it is my prerogative to go direct to the feedbag for my information. But when I visit the office of one of our experts, on a fact-gathering mission, I make it a habit to suggest that he tell his superior what we talked about." *Railway Age's* reporter gains the impression that Saturday mornings, when offices are freed from routine and interference, are the peak period of idea formation on the I.C., when the president is likely to wander into other officers' quarters, sit on the desk and start asking questions. He



TRAFFIC DENSITY MAP OF ILLINOIS CENTRAL shows relative importance of lines, based on 1947 figures. The wider the bands along the route, the greater the density. Arrows show direction of traffic. Area on right of route line is for northbound traffic, on the left, for southbound. On the east-west route, westbound traffic is above the line, and eastbound traffic below

TRAINING IS IMPORTANT. In a life-size model of a dining car galley, a supervising chef demonstrates his art

MOBILE VISUAL-AID TRUCK tours the system about once a year to reach employees on the ground with sound-motion pictures on safety. Their supervisor is "emcee"

seeks other peoples' notions and is apt, at the same time, to reveal his own.

The Markham administration firmly established the policy of promotions from within. In the 33 years Mr. Johnston has been working for the road, only one outsider was brought in to fill an official position.

"If ever we come to the point where the 'family' fails to produce the material necessary to fill our management post, then we'll be certain we don't know how to run a railroad. A man doesn't promote himself; *we* promote him; and we're failures if the man doesn't make good."

Important Role for Board

Officers of the I.C. agree that "on this railroad the board is definitely important. They have wide prerogatives in setting the sights. Beyond that, they don't interfere in the day-to-day management of the property; we have lots of room to turn around in." Once a year, the directors go over the line on a working tour. President Johnston encourages his officers to talk things over with individual directors. He makes this contact easy by inviting the official staff to lunch with the directors after every monthly board meeting. He lays down but one condition: that he be told, in general, what they talked about, afterwards.

In 1939, the I.C. removed its top headquarters from off-line New York to Chicago and initiated the custom of drawing its directors largely from the ranks of outstanding businessmen — not necessarily large shippers — in cities along the line or elsewhere in the Midwest. The president emphasizes: "Their knowledge of financial affairs and of business conditions in the territory which we serve has been the deciding factor in the tremendous financial improvement made by this railroad."

"MEN . . ."

Repeatedly in his addresses and reports the I.C.'s president takes pains to observe: "Good personnel relations are *fundamental* to nearly all our activities." The selection, training, informing and protecting of employees are not frills. If he can be said to have a dominant interest among the three-fold concerns of management, it would be "men."

Ask almost any I.C. officer to recount the achievements of the road and he is apt to point out that, of a total of about 40,000 people who now have an active employment relationship with the road, 10,000 have been employees from 15 to 25 years; another 11,000 from 25 to 40 years; another 1,200 from 40 to 50 years and at least 70 old timers can point to 50 years or more. In brief, more than 53 per cent of the "family" have been members for 15 years or more. Asks the road's Family Book: "Need one ask for better proof of stability?"

The beginnings of personnel activity as something

LAYING continuous welded rail in a tunnel on the Edgewood Cutoff

more than wage negotiation and administration of sickness and relief funds came in 1934 when the "Wage Bureau" became the Personnel Department. Still further recognition of the importance of "men" was effected shortly after Mr. Johnston became president, when the Personnel Department was transferred from the Operating Department to the status of a unit in the Executive Department. Its director, G. J. Willingham, conceives his job as one of maintaining "a harmonious and creative partnership of men and management." One of the means of so doing — complete information on company policies, problems and prospects — is considered by some corporations with heavy suspicion. The I.C. believes otherwise. In a recent talk President Johnston expressed his views with absolute frankness:

"The problems of labor today are largely the result of our failure to realize our responsibility to labor . . . . Our principal problem is to pull aside the 'iron curtain' which, generally, has separated management from workers too long. We must tear down the false gods which have been set up among our workers by those who seized their opportunity while management neglected or did not recognize its obligation."

At another point he declared: "The labor problem today is the development of a method of getting to the vast army of workers correct information about their own companies, in such a way that they can understand it and will accept it without suspicion."

To this end he has faith in the company's "tell all" policy. "When we know we're going to have to cut expenses, we hang out a shingle in advance. It is absurd to think that everybody on a railroad doesn't have an idea what is going on. The important thing to do is to see that they get the *right* idea." Asked whether "tell all" doesn't give too much ammunition to union leaders in making fresh demands, Mr. Johnston replied: "You can't tell the unions anything; they know it before it happens."

President Johnston is fond of the expression, "Good labor relations is good business." He points out that wages on the railroad take 53 cents of every dollar taken in, not counting an additional 5¾ cents for payroll taxes. He is sure of the fundamental loyalty of the railroad's employees. He was born and brought up in a railroad town; he knows that when employees go out on strike, the reason, for most of them, is pride of craft and the dislike of being called a "skunk." Somehow, dealings with their employees on matters of importance have been snatched away from individual railroads. "If we were let alone and not stirred up by outsiders we could settle most differences among our folks right here."

Begin with Supervisors

The Illinois Central management believes that the job of getting behind "the iron curtain" starts with supervisors, who must be made to feel that "they are on the side of management." To this end the road encourages the flourishing Supervisors Clubs, of which there are now 12 at important points along the road, with more than 1,800 members. Well-attended monthly or quarterly dinner meetings bring to the members papers, talks by outside speakers, discussions and films. Supervisors receive from the Personnel and Public Relations Departments a wealth of printed material to help them in their jobs. To mention but a few recent or periodical items:

(1) "The Foreman's Letter" and "Supervisor's News Service," published fortnightly by the National Foreman's Institute;
(2) The Dartnell Corporation's manual, "A Short Course in Human Relations"; and
(3) Manual titled "Suggestions and Ideas for the Guidance of Junior Officers of the Transportation Department" (similar manuals for supervisory personnel in the Engineering & M. of W. and Mechanical departments).

All employes on the railroad are supplied basic packages of information, including:

(1) Since 1938, annual report to employees;
(2) Since 1920, monthly message from the president, titled "Things To Talk About";
(3) Since 1948, 38-page, illustrated "Family Book" summarizing organization, employee benefits, traffic and position of the railroad; and
(4) Monthly "Illinois Central Magazine."

In addition, the road has a vigorous program to dem-

onstrate the superiority of the American way of life and, in the words of its president, "educate personnel so that they can recognize false doctrines." To cite but a few items, in the last few years employees have received:

(1) In 1948, booklet "Facts You Should Know About Our Business System—and You" (28,000 employees);
(2) In 1948, official "Freedom Train" publication, "Good Citizen" (key supervisors);
(3) In 1948, booklet titled "Make Mine Freedom" (key supervisors);
(4) In 1950, comic-book style story "Fight For Freedom" (mailed home to 34,000 employees and handed to several thousand more);
(5) In 1950, a second comic style story "We Hit the Jackpot" (all employees); and
(6) Films on economic subjects.

Now underway is an ambitious program by which a 45-min. placard-illustrated talk titled "This Is Our Problem" is being given to every employee on the system, on company time, by employees who have been especially trained in public speaking. Some 4,000 employees in the Chicago area have already heard the "freedom story" and turned in questionnaires — most of which indicated a desire to have other topics covered in the same manner. The talk has four objectives: (1) Identify socialism and communism; (2) Point out the superiority of the "American Way"; (3) Suggest means by which to defend the latter; and (4) Inspire the desire to defend it.

The Suggestion System

A prime means by which I.C. employees are "let in on" management is its highly successful, 12-year-old suggestion system. The statistics alone are significant: More than 312,000 suggestions have been received, of which roundly 54,000 have been found usable. For those achieving tangible savings, some 12,000 employees have received more than $680,000. But, in the opinion of Harvey C. Marmaduke, who directs the activity, economic savings are among the least important benefits of the system. Both the general suggestion committee at Chicago and the 14 local committees are joint labor-management. The former—which serves on appointment by the president — is made up of eight general chairmen of union organizations and eight management representatives. Thus the system is a channel for improved communication between management and employees — a "two-way track for trains of thought."

President Johnston observes: "The greatest thing we get out of the suggestion system is the change in the thinking of the organization — particularly in the middle and upper levels." He recalls how "the careful consideration of a third of a million ideas" has helped build up the road's supervisors. In the "good old days," the rank-and-file was expected to do what it was told. Thinking was discouraged. "Times now have changed — Heaven be praised — and for the better. Management became smarter. It now welcomes the thinking of every one in an organization . . . . Much of the business progress in recent years can be traced to this changed attitude."

At the end of 1935, the I.C. had an employee casualty rate (per million man-hours) of 7.29 and ranked eighteenth among 21 major roads. Ten years later it moved up to second place, with a ratio of 3.50. In 1946 it took first place, with 2.17. After taking second place among the big roads in 1947 and 1948, it again copped first position in 1949, with an employee casualty ratio of 2.64. Improvement and high position are the result of persistent education; centralization of standards and training in the personnel department; and high quality of equipment and plant, but most important, according to G. J. Willingham, personnel director, "the 'top' is interested—and everybody on the railroad is interested in what the boss is interested in."

Safety work on the I.C. is carried out on the theory that "carelessness is cancerous" and that "the most good can be done with the individual — on the job — on the ground — at the time." Some 50 to 60 per cent of the ideas submitted in the suggestion system relate to safety in whole or in part. The road issues a standard book of rules for all employees in all departments, so that even office workers have a definite guide to follow. Safety films produced by the road's own unit of "audio-visual aids," as well as by other organizations, are brought from time to time to every employee. For those who cannot be reached in enclosed assemblies, the road operates a light truck with a reverse projection screen by which sound motion pictures may be shown to employees outdoors on the railroad.

Among other means of training and education in safety are:

(1) Two series of monthly posters—one for engine and yard train-service employees and the other for general employees—drawn, in humorous vein, by a staff member;
(2) Assignment of safety supervisors to travel full-time over the railroad and assist division and shop officers detect and eliminate hazards;
(3) Monthly newsletter to supervisors and union general and local chairmen reviewing accidents by crafts, by divisions and by shops;
(4) Issuance each year by the president of a safety trophy to the operating division turning in best safety performance; by the chief mechanical officer for the best shop record; by the chief of the engineering department for the best division performance; and by the head of purchases and stores for the safest storehouse; and
(5) Safety clubs for supervisors; cards issued to more than 5,500 supervisors whose men have not had a reportable injury for periods ranging from 1 to 24 years; more than 450 supervisors boast clear records for 20 years or more.

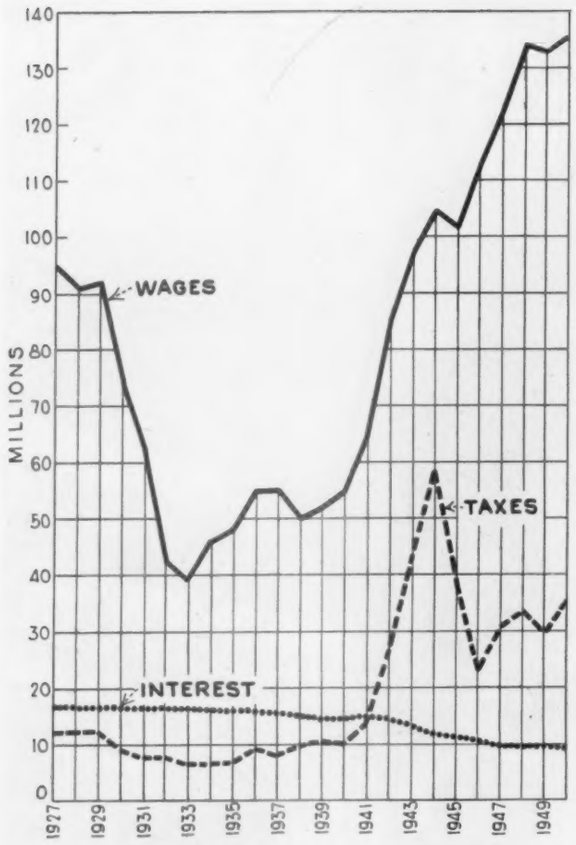
"Men" outside the railroad, as well as inside, are a major concern of the I.C. George M. Crowson, who heads up public relations, believes in a "tell all" policy for the public too. Back in September 1920 the road initiated the policy of publishing monthly messages in all on-line daily and weekly newspapers, explaining the organization, problems and aims of the railroad. This program has continued without interruption for more than 30 years. A total of 360 messages have been signed by four successive presidents and have appeared in nearly 500 newspapers, with an aggregate monthly circulation of more than 7 million copies. Celebration this year of the road's centennial is an opportunity for "taking the mystery out of corporations" which Mr. Crowson and his centennial committee are exploiting to the full — as described separately in this issue.

"MONEY . . ."

The greatest achievement of the Illinois Central in the past decade, according to many people within and without the organization, is its financial rehabilitation, summarized in another article by an investment specialist. Point Four of the road's statement of policy reads: "To meet our financial obligations in a manner that will maintain credit and attract capital for improvements."; J. H. Wright, the system's new general counsel, asserts that the big battle of its management has been to make the road "depression-proof — so strong it can weather any storm."

The job has not been easy. At one point during the thirties, the I.C. was so close to bankruptcy that its general counsel actually drew up and had in readi-

MODERN STEAM POWER hauls road freights. Paducah (Ky.) shops are principal agency for keeping these locomotives efficient



INTEREST CHARGES (including equipment trusts) have been a declining claim on the road's revenue since 1927, year of peak debt, while wages and taxes have increased

ness legal papers for filing under Section 77 on an hour's notice. As one outside observer puts it: "At a time when more than one-third of the country's railroad mileage clung to the protection of the courts, the I.C. chose the hard way; tightened belt; paid interest to its debtors; and set about the painful process of buying in debt."

The result is shown in the accompanying graph, based on 1927, the year of the railroad's peak debt, which shows that, while other claims on the railroad's earnings — like taxes and payrolls — have greatly increased, debt (including equipment obligations) has been sliced 44 per cent and interest charges 46 per cent, as of the close of 1950. In 1927 interest took more than 9 per cent of gross operating revenues; in 1933, with depression level of traffic, it took more than 18 per cent; in 1950, it took only a little more than 3 per cent.

While heroic measures brought the road out of the woods, there still was widespread apprehension about its ability to handle about $190 million of debt due to mature by the end of 1955. Repurchases of bonds whittled down to $81 million the volume of non-equipment debt maturing 1950-1955. Then, on September 15, 1949, the company announced acceptance of a refinancing plan by which new consolidated mortgage bonds, with serial maturities, 1974-1979, were offered in exchange for 60.6 million of bonds maturing in the period 1950-1955. As of the end of 1950, $28.9 million of the new bonds had been issued, representing 47.6 per cent of exchangeable bonds.

The I.C. can announce that its debt is now "manageable." All its bonds are now selling at par or above. In its 100 years of service, it has never defaulted on a dollar of bonded debt; has never been in receivership; and has never undergone reorganization. Back in the sixties and seventies, the I.C. sold the first low-interest bonds ever floated by an American railroad—4 to 5 per cent, at a time when rail bonds sold at 7 and 8 per cent interest. In 1886 it accomplished the then unprecedented feat of selling 3½'s at par. This tradition of strength has been reaffirmed.

Dividends

From 1859 to 1931, inclusive, stockholders of the I.C. enjoyed an unbroken succession of dividends — a feat, it is believed, equalled by only one other trunk line railroad in the country. Following financial rehabilitation of the road, its management was able to re-establish dividends on the preferred stock in 1948 and on the common in 1950. To the road's 9½ thousand recorded stockholders (as of the end of 1949) President Johnston was able to say, "The resumption of dividends on the common stock is one of the goals for which we have all been long striving." Concerning the road's dividend policy in recent years, he told *Railway Age* that management believes it has acted in the interest of stockholders; that, by "dealing with a dangerous debt situation, we preserved the owners' equity." He emphasized that he and most of the top officers of the road have substantial individual or family holdings of I.C. stock and "like dividends as much as anyone else."

Money—Control of Costs

President Johnston calls his accounting staff "the seeing eye department of the railroad" — the outfit that "keeps score." He believes that railroad presidents should give latitude and encouragement to their accounting departments and bring them into their councils *on an equality* with all other departments where money is involved. "A president can set an example to the other departments by referring to his accounting department for verification and study the cost data and other information from outside the company on which decisions may have to be based. He may thus stress the unbiased perspective of his accounting department in matters in which it may properly be the scorekeeper. There is a tendency, for example, for the coordinate departments to submit recommendations to the president which may be supported by data assembled only within the various departments involved. All data should be considered tentative until examined by the expert accounting eye."

As a tool of management, accounting on the I.C. has a highly developed cost study program. According to Comptroller F. E. Martin, "Definitely our cost findings are sufficiently accurate to permit decisions on rates on particular commodities on particular hauls by the traffic department. Refinement of the data is determined by the needs of each case. We do not complicate the issue needlessly; we use our own formula on joint costs, which is subject to constant revision as the facts change."

Mechanization of accounting, according to Mr. Martin, "has gone as far as is currently practicable." Sometime in 1951 complete mechanization of the major functions of his department—including disbursement, freight movement, station accounts, freight claims and car and locomotive movement—will have been achieved. Future

expansion and improvement will depend more upon new devices and technical developments, rather than upon expanded application, with the exception that there lies ahead a fertile field for interline accounting and exchange of punch cards and tapes by the railroads, once there have been solved such problems as universal station numbers. The speed and economy of mechanical equipment have made it easier for the department to cope with the constantly increasing load of government-imposed tasks resulting from regulations, taxes and payroll deductions. "Every new law passed puts another log on the back of the accountant." Mechanical equipment also makes possible speedier production of the data which management needs for effective control of costs. Every seven days, for example, on the fifth day following the end of the period covered, the president and his immediate staff get a detailed report on revenue and expenses. Every ten days, five days after the end of the period covered, there is issued a report on road and yard operations for division officers which helps them develop fuller and more uniform controls and check and correct the earlier statistics customarily taken from local sources. Declares Mr. Martin: "The I. C. has an effective system of budgetary control. It is based on planning in advance and keeping up with income and outgo on a daily basis."

Adjustment by the road to the 40-hour week, effective September 1, 1949, is as much an example of the value of plentiful and accurate figures as it is of "know how" on men and machines. Together with accompanying wage increases, the 40-hour week threatened to increase the railroad's operating costs more than 10 per cent. Management, according to Mr. Johnston, had either to "pass the hat" among the shippers or "roll up our sleeves and make every dollar and every move count for more than it had ever counted before. . . .

"I said to our department heads that we would make this very fundamental and costly change in our operations without any increase in our expenses. Some of my officers were skeptical, but they all agreed to do their best. . . . We went to our industrial traffic friends and told them what we were undertaking to do and asked them to help us, and they did. We had a lot of Saturday and some Sunday operations that could be and were closed down entirely; we discontinued certain reports and records for our internal use which we found we could get along without; we cut corners here and there. We did not worsen our service in any material way; and we won the battle."

Money—Investment

Gross capital expenditures by the I. C. in the five-year period 1945-1949 aggregated almost $100 million—of which more than $25 million was for fixed plant and almost $74 million for equipment. Such expenditures in 1950 are estimated to have aggregated $18 million.

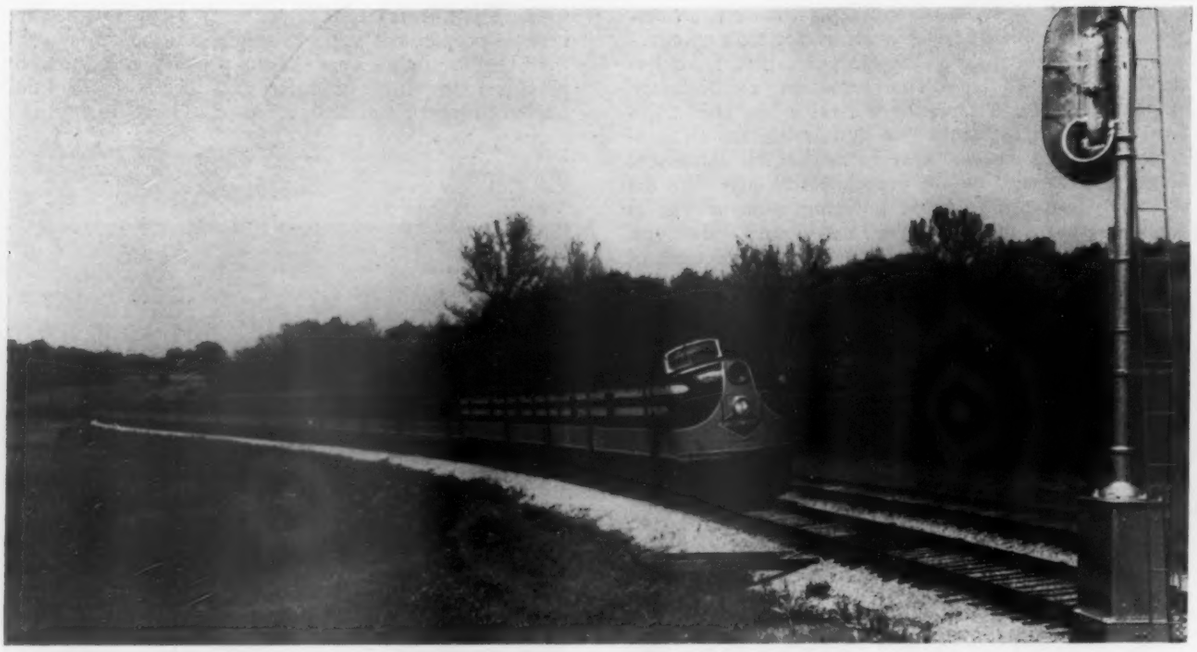
President Johnston was asked what annual rate of return in operating savings would justify an expenditure of money. He replied: "If we waited for the time to come when the cost of laying 131-lb. rail, as compared with existing 90-lb. rail, would justify itself in savings in maintenance cost, we'd never lay it. If we waited until we could get 30 per cent a year on new freight cars, we'd never buy them.

"Everything must stand on its own bottom. The primary job of an individual railroad is to preserve and enhance its equity in the total business activity of the country. It must provide facilities of character and quantity necessary to meet the economic demand which, in the long run, gives it the traffic for which it exists and the revenues from which to improve itself. We lay heavier rail because we need it to carry heavier traffic. We buy freight cars because people need them to ship goods in."

He believes a railroad has a primary obligation to provide its equitable share of cars and other facilities needed to meet reasonable, foreseeable levels of business

THE CENTRAL HAULS MORE BANANAS than any other railroad on earth

A COAL CARRIER. During the past 15 years, the Illinois Central has greatly improved its competitive position in coal



demand and growth of the country. "As long as a railroad fails to do so, its officers have no right to get on a soap box and holler about unfair competition. It is something like shouting, 'You should give me your business, even if I can't handle it'."

Roadway Improvements

Regarding improvements in road and structures, C. H. Mottier, vice-president and chief engineer, stated that it is not the policy of the I.C. to spend money merely to improve the property, but each improvement is critically analyzed on an economic basis to see if the expenditure can be justified. "If we have to be classified, label us 'carefully—but not obstinately—conservative.'" In recent years, because it was the policy of the railroad to reduce its indebtedness, it has been necessary to confine expenditures to projects that will do the most good in meeting service demands or in producing added economies.

During this period extensive grade or line revisions have not been justified, as the general character of the territory through which the Illinois Central operates does not impose serious transportation restrictions. The 165-mile Edgewood cut-off, completed in 1928, eliminated undesirable grade and line restrictions for freight operation between Edgewood, Ill., and Fulton, Ky. Between Fulton and Memphis there is a maximum ruling gradient in both directions of 0.5 per cent and south of Memphis the equivalent of 0.4 per cent on the road's freight line. Modern motive power is making unnecessary certain line and grade changes that formerly were held desirable, particularly on the line west of Chicago to Omaha and Sioux City. On the Gilman (Ill.)-St. Louis line several speed restricting curves have been eliminated in the past five years primarily to improve operating conditions between Chicago and St. Louis.

Markham Yard, the chief I.C. classification yard for Chicago, which was the most modern yard in the country when completed in 1926, is being improved with a new track arrangement, automatic routing control and new retarders.

These changes have been prompted primarily by the need to replace completely the second oldest retarder plant in the country. Opportunity was taken at the same time to achieve maximum benefit from the latest type of retarders by regrouping and simplifying the layout. Since cars roll better than they did in 1926, hump and yard gradients have been revised and a non-accelerating gradient provided on the yard tracks beyond the retarders. The I.C. has been in the forefront in research and development in track design and use of maintenance machinery. In 1934 it laid 20 miles of new track north of Kankakee, Ill., in which it installed, for test purposes, a wide variety of fastenings, tie protectors and other roadway devices, and is continuing to conduct many other tests. Reconstruction of its Ohio River bridge at Cairo, Ill., at a cost of $6,300,000 will be completed in 1952.

Investment—Equipment

Since the close of World War II the I.C. has purchased or built in its shops more than 15,000 new freight cars. Upon completion of its present program the road will have replaced the equivalent of more than 35 per cent of its 1945 car ownership. A normal program of about 7½ years has been condensed into a five-year period. The company originates a larger share of its traffic than the average Class I road and gets slower returns on its cars. Its president says he is a "high per diem man." He points out that a coal car earns an average of $106 net a trip on line. Since it makes a turn every 11 days, it earns about $10 a day in revenues. But when it is off line it earns only $1.75. "And when you don't have a car to spot nowadays, you don't get the business." He would like to see a high per diem rate to encourage car ownership and, in addition, a

Right — FAST FREIGHT BC-2 ready to leave Birmingham for Chicago

Facing Page — PRINCIPAL PASSENGER TRAINS ARE DIESEL-HAULED. The streamliner "City of New Orleans," between Chicago and the Mardi Gras city, is one of the biggest earners in the country

penalty for failure to return cars promptly to owners in accordance with car service rules.

The I.C. went into World War II with a large stock of ultramodern steam power. In an eight year program starting in 1935 the road converted 1,674 steam locomotives and built 20 new ones—most of them hand-tailored for specific service. Its fuel coal cost is one of the lowest in the country. Thus, according to Operating Vice-President C. F. Duggan, it will probably continue for the present to operate road freight service with steam power and expand its already considerable ownership of diesels for switching and passenger service where savings and service advantages are most pronounced. The road has already spent some $145 thousand toward research on a coal-burning gas-turbine locomotive being developed by a group of important coal roads, the first unit of which is expected to be out on road test in the near future.

Materials

Back in 1925 the I.C. stores department started to mechanize materials handling, and today it is a leader in that field. As recently as 1947, it was revealed that, despite much higher wages, store expense charges on the road were slightly less than they had been 30 years before. Palletization designed to cope with the wide variety of items used in railroading—including basket type containers—has been utilized on a wide scale. Suppliers are encouraged to ship in unit loads from source, final distribution to using forces being made direct from the pallet at the storehouse or from the supply car. Unit loading has not only cut handling costs and time, but conserves space by permitting tiering, and has contributed substantially to greater safety. Mechanized accounting methods are used in connection with material charge-ins and -outs and for the maintenance of a perpetual inventory and price record system. O. O. Albritton, vice-president—purchases & stores, states that the extensive salvaging operations carried on by the road—which turn out about $500,000 worth of items a year—will probably assume a new importance in the event of full-scale war and severe shortages of new materials.

THE FINAL PRODUCT . . .

On the I.C., "Everybody works for Traffic Vice-President Roy Barr." The president is out on the road at least 10 days a month and whenever he is in a town he gets out and calls on the trade. One of the first things he did after becoming president was "to convince our division superintendents and their staffs that they are *ex officio* members of the traffic department."

Coal is one of the outstanding traffic achievements of the road. In the last 15 years the Illinois Central has greatly increased its competitive position in this commodity. Tonnage carried increased from less than 15 million in 1940 to almost 27 million in 1945, and, despite mine stoppages, was 21 million in 1949. Another is export-import traffic—principally through Gulf ports —which, in 1949, contributed 12 per cent of freight revenues and 8 per cent of total cars handled. The road's major port, New Orleans, was fifth or sixth among all ports in foreign tonnage 15 years ago. Today it is second. The I.C. has played an important part in this development through its famed Latin American traffic tours, its part in creating International House in New Orleans, and its work in getting sellers and buyers together.

The I.C. was one of the first railroads in the country to set up traffic sales on a systematic basis. In 1856, a year before its original charter lines were completed, it appointed a representative at Chicago "to travel up and down the line to encourage business." Today its traffic department carries out a planned program of training for present and future salesmen. Today almost every young man acquires some experience in rates at a major office. At Chicago a two-hour study class on rates and traffic is held every week for about 30 men. All sales representatives are sent over the road periodically, in

small groups, to learn the line and principal terminals. While specialists are employed for commodities like coal, cotton, perishables, lumber and foreign traffic, their availability does not relieve the other salesmen from responsibility of servicing these commodities.

Promotion of agriculture is one of the road's most historic and intensive activities. Among its outstanding contributions, past and present, are: prizes for useful patents for agricultural machinery; pioneer work in crop diversification—especially in the South; furnishing of expert butter makers to any community willing to establish a creamery; starting in 1916 the distribution of pedigreed bulls (changed to lending in 1923 and today "evoluted" in part to artificial insemination). It was probably the first road in the country to engage in reforestation, and several years ago introduced a fleet of tree-planting machines for demonstration and loan.

In freight rates, the I.C. is an experimentalist. Its published statement of policy includes maintenance of rates "that will stimulate the flow of commerce." In a recent public newspaper advertisement, titled "Making the Right Rate," the I.C. pointed out that, because of its unique straddling of territories, it is a member of more rate conference groups than any other railroad in the country. Except for the far west coast and east coast associations, it belongs to every other important rate conference group. "Our rate experts at Chicago, St. Louis, Memphis, New Orleans and Atlanta are committed to the never-ending task of forging a flexible rate structure. Of all the many services this railroad renders the public, none exceeds this one of rate-making as an important contribution to the health of American commerce."

The first so-called trainload rate (more accurately quantity rate) sanctioned by the Interstate Commerce Commission—for blackstrap molasses tendered in shipments of 1,800 tons or more—was published independently by the I.C. to forestall threatened water movement. The I.C. also established the first all-commodity rates from the North into Southeastern territory, and has also been active in establishing rates on various commodities to meet water competition—including sugar, petroleum, coal, cotton and grain. The road has also been active in trying out so-called discount or incentive rates on such commodities as whisky, paint, tobacco and cigarettes, to meet truck competition.

When orders already announced have been filled, the I.C. will have invested a total of more than $85 million in modern freight equipment since the close of World War II, including both new cars and diesel switching locomotives. This improvement will serve to further enhance a reputation for fast, reliable schedules and better-than-average car supply. Starting in 1936, when its fast MS-1 was placed in service from Chicago to Memphis, the road enjoyed the distinction of running the world's fastest freight train with a run of 500 miles or more. When initiated, MS-1 carried up to 30 cars, and was limited to merchandise. Improved motive power makes it possible for MS-1 today to carry an average of 60 cars, and up to 70 cars including carload shipments; to allow a later closing time and departure at Chicago; and to make Memphis, 505 miles distant, in 14 hours, 55 minutes, including yard time for reicing perishables.

SE-1, Chicago to Birmingham, is said to be just as fast "in every respect," and a host of other dispatch freight trains cover the system. The 1949 annual report of the road contains a map showing 45 regularly scheduled manifest freight trains on the move at one minute after midnight on a typical business day. As the world's largest carrier of bananas, the I.C. accords extra fast handling to that most perishable of perishables. No matter what time of day or night a banana special is started out of New Orleans it is accorded a schedule of 37½ hours for the 890-odd-mile run to Markham yard. There is established for each division en route a standard allotment of running and standing time, respectively, by which close score on the specials must be kept. The line west of Chicago to Missouri river points—notable for density of traffic handled on its single track—is famed also for its fast "fleeted" meat trains originating at Missouri river points. It has been said that its employees are especially service conscious on this traffic "because they know that if it doesn't get to Chicago in time for connections, they won't get to handle any more." Back

(Continued on page 119)

WHEN THE CENTRAL WAS BUILT, the citizens of Chicago insisted it be constructed along the lake front, to save them the expense of erecting sea walls. Where the original terminus stood, merchandise cars are loaded today

Stable Roadbed Is Aim on Big Cutoff

High design standards and careful control of grading operations to insure maximum compaction in fills are among construction features of 70-mile line in Missouri

Grading for a new line these days involves a great deal more than simply moving a lot of dirt from cuts or borrow pits into fills. To minimize later maintenance headaches in the form of soft roadbed, slides and drainage difficulties, the modern construction engineer is taking advantage of the large body of knowledge that has been accumulated regarding the nature of soils and how to build them into stable roadbeds. Probably the outstanding example today of the application of this knowledge to a railroad job is provided by the grading methods being employed in the construction of the Centennial cutoff on the line of the Chicago, Burlington & Quincy between Chicago and Kansas City.

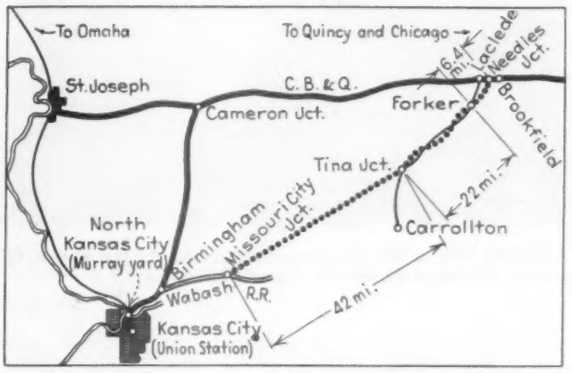
A general description of this $16,000,000 cutoff and of the methods employed in locating it, which included photogrammetry, appeared in *Railway Age* of July 15, 1950. As shown by the map, the cutoff will form the hypotenuse of what amounts roughly to a right triangle, the other two sides being formed by the lines from Brookfield, Mo., to Cameron Junction, and from Cameron Junction to Birmingham, which comprise the present route for Chicago-Kansas City trains. At its easterly end the cutoff will make a junction with the existing line at Needles Junction, a point about 3 miles west of Brookfield, while at the westerly end it will connect with the Wabash at Missouri City Junction. From the latter point to Birmingham, a distance of about 16 miles, Burlington trains will operate over the Wabash.

The cutoff will be 70.99 miles in length. However, not all of it will be entirely new construction. Starting at the easterly end, and extending from the junction with the existing line to a point known as Forker Junction, there will be 6.4 miles of new line. From Forker Junction to Tina Junction a 22-mile section of the Laclede-Carrollton branch is being reconstructed and incorporated into the cutoff, and between Tina Junction and Missouri City Junction the gap is being closed by 42 miles of new construction.

To Permit High-Speed Operation

The cutoff is being built to provide for improved schedules that will put the route between two of its principal gateways on a comparative parity. In keeping with other high-speed lines on the Burlington the cutoff was made as straight as possible, with a maximum curvature of 1 deg. One tangent is 16 miles long. The maximum grade is 0.8 per cent.

A natural result of projecting a relatively straight and level railroad through the rolling Missouri hills is a series of relatively deep cuts and high fills. The cuts range up to 95 ft. in depth and the largest of them will involve approximately 450,000 cu. yd. of excavation,



The Centennial cutoff will shorten the Burlington's route between Chicago and Kansas City by 22 miles

mostly rock. One fill is 145 ft. in height, requiring 700,000 cu. yd. of material. The project as a whole will require 8,500,000 cu. yd. of embankment.

High Construction Standards

The embankments are being built with side slopes of 2 to 1, while cut slopes are 1½ to 1 in earth and ½ to 1 in rock. Fills up to 15 ft. in height have a top width of 24 ft.; for each additional 15 ft. of height the top width is increased 0.5 ft. on each side. The standard base width for earth cuts is 50 ft.; that for rock cuts is 40 ft. Where necessary to obtain needed fill material the cuts are widened beyond the prescribed standard. A consequence of this is that the base width of one cut is approximately 100 ft. Extreme care was exercised in the design to insure that all cuts would be adequately drained and that sufficient space would be available at the bottom of the cut slopes to permit good maintenance operations.

Grading specifications call for the placing of earth in the embankments in 8-in. layers and their compaction by six passes of a sheepsfoot roller. Extra passes of the rollers, if needed to secure the desired degree of compaction, are paid for by the railroad. Where rock excavated from the cuts is used in making the fills it is placed and compacted in 3-ft. layers. To minimize the possibility of pools of water forming at the base of the embankment slopes, borrow pits are established at locations some distance from the track.

In building this line Burlington engineers are taking full advantage of scientific methods of soil analysis and control of compaction in making the fills. Such methods are especially needed on this project because of the "tricky" nature of some of the soils encountered. In a general way these may be classified as either a

A crawler tractor with a rubber-tired scraper in tow gets help from a bulldozer during the loading operation

Earth is placed in the fills in 8-in. layers, each of which is compacted by six passes of a sheepsfoot roller

deep plastic soil of residual origin or a deep drift cover. Two general types of drift soils are encountered, namely, a very old material of extreme plasticity, and a brown-colored silty clay containing a considerable quantity of sand and gravel. Difficult problems have been encountered in the use of the first of these, but the latter is easily worked and presents few problems. Deposits of loess of variable thickness are encountered throughout the length of the line, with the deeper layers occurring on the western end of the project near the Missouri river. Underlying the overburden are bedrocks consisting primarily of sandstones, shales, limestones and an occasional seam of coal or underclay.

Core Drillings Provide Data

During the early stages of the design work much data on the subsurface conditions along the new alinement was obtained with the aid of two core-drilling outfits. Samples of the core drillings were placed in jars for examination by contractors. The data obtained by these explorations, coupled with geological and soils information already available in published reports, proved of great value in establishing the slopes of both cuts and fills and in obtaining a general idea of the relative amounts of rock and earth to be moved.

In placing the fills the objective was to secure 95 per cent or better compactions at the optimum moisture content, using the general procedure of analysis and control adopted by the American Association of State Highway Officials. To make the necessary field and laboratory tests a full-time soil analyst is employed and provided with a well-equipped field laboratory which is located in the kitchen of an old diner that is used as an office car by the field forces. For additional advice on soil and related problems a consultant is employed who visits the project as needed to consult with the soils engineer.

The work of the soils engineer on this job consists of determining the wet and dry weights per cubic foot of the compacted soil in the new fills and comparing these values with laboratory determinations to ascertain if the desired degree of compaction is being obtained. The wet weight per cubic foot in the fill is determined by excavating the compacted material from a given layer with a 4-in. or 6-in. hand auger. The excavated material is weighed and the volume of the hole is determined by filling it with some material of known weight per cubic foot — dry sand, for instance. Laboratory measurements and comparisons are then made to determine the percentage of compaction. If these show that the moisture content is appreciably above the optimum, efforts are made to dry out the material before it is rolled. Conversely, water is added if the moisture content is appreciably below the optimum.

Wet Summer Hinders Work

Grading work on this project was started in March 1950 and was carried on throughout the summer and fall with the objective of completing the earth excavations in the cuts by winter and then starting on the rock work. The summer months in this region were extremely wet, and this fact, coupled with the variable character and poor quality of the soils encountered, resulted in some fairly serious compaction-control problems.

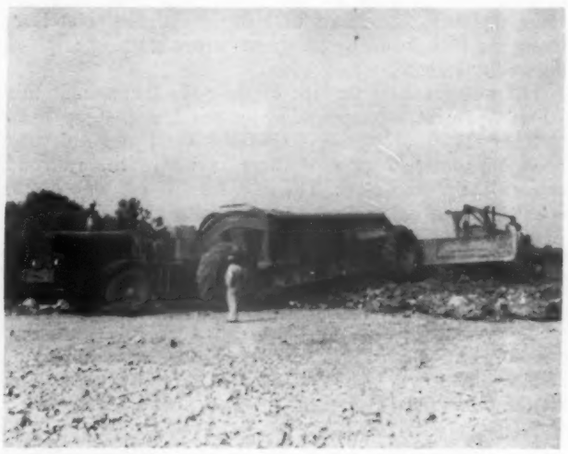
The wind-blown silts, for instance, especially the deeper ones occurring on the west end of the project, were a particular source of trouble due to the wet weather. Because these silts had a moisture content above the optimum they had a tendency to become "quick" when being rolled. If normal summer weather conditions had prevailed this difficulty could have been overcome in part by permitting the cuts to dry out. Because of the relatively heavy rainfall, however, it was necessary to abandon several cuts temporarily, pending more favorable weather conditions.

Black organic silts occurring on an extensive scale on the eastern and central portions of the cutoff have caused some little difficulty. These are unsuitable for use in building embankments, and consequently where the cuts are deep they constitute a considerable problem because of the excessive amount of waste involved. In several instances it has been necessary to mix some of

The largest cut on the line, shown here partially completed, will involve about 450,000 cu. yd. of excavation, mostly rock

Blasting operations in the large rock cut are carried on with precision in loosening material to desired side slopes

A crawler shovel loads rock and shale into a bottom-dump wagon, while another wagon waits in the background



A load of rock is dumped on a fill; this material is being placed in position in 3-ft. layers

Where it was necessary to shift the track of the Carrollton branch it was first lifted out of the ballast with a power jack

Bulldozers pushed the existing track of the Carrollton branch to new positions for construction of the new line

the less obnoxious silts with underlying drift materials; however, care has been exercised to see that the organic silts are not used within two or three feet of subgrade.

In a few instances deep cuts in the old plastic clay-like drift materials have presented exceptionally difficult problems. These soils are extremely plastic and wet and it has been necessary to waste quantities of them. Not only are they difficult to use in embankments, but if they are used they would create potential landslides and subgrade diffiiculties.

Other Problems Encountered

Several foundation, subgrade, erosion and potential landslide problems have been encountered on this project. The engineering personnel has been able to predict these problems before they were encountered and to find solutions for them during the construction operations. Since great care is being exercised in the control of compaction it is thought that no appreciable trouble will be encountered with slides in ordinary embankments but there could be some difficulty with side-hill fills, although different procedures are being provided to take care of this condition.

At some of the higher fills it is possible that foundation trouble will be encountered because of the exceptionally poor quality of the soils underlying them. In some instances the more undesirable surface materials under the fills are being removed before starting to place the embankment.

The non-granular texture of the soils throughout this 70-mile project is emphasized by the fact that up until October 1950 only two important sand deposits had been encountered. One of these is where the railroad crosses the Grand river. The east side of the valley wall consists of an old terrace remnant with eight to ten feet of a brown silty clay of excellent quality for embankment work, underlain with many feet of clean sand. Most of the mile-long fill across the Grand river bottoms is being constructed by placing sand on the bottom and the silty clay on top, thus presenting an ideal situation for the best use of available materials. It is fortunate that an almost unlimited supply of sand is available at the Missouri City end of the project.

A special effort is being made to obtain a stable subgrade immediately under the ballast section. To this end the use of the "fat" clays as subgrade is being minimized as much as possible. Where this is not feasible an attempt is made to mix sand with the heavy clay. Any known unsuitable areas at the subgrade elevation in either cuts or on fills are treated by scarifying and re-rolling, or by excavating and replacing with more suitable material. In some extreme cases, stabilizing the subgrade with the use of soil cement or bituminous materials is being considered.

Fills "Roofed" with Road Oil

To help keep water out of fills 25 ft. or more in height their top surfaces are being treated with two applications of No. 2 road oil. The first coating consists of 0.7 gal. per sq. yd., and the second 0.5 gal. The surface of the subgrade is scarified before the first application is made and is rolled following the second.

For contracting purposes the cutoff length is divided into three schedules: Schedule I extends from Needles Junction to Forker Junction; Schedule II runs from the latter point to Tina Junction; and Schedule III from Tina Junction to Missouri City Junction. There is a grading contractor for each schedule, one of whom is being assisted by a subcontractor. The grading contractors are also doing a certain amount of the bridge and culvert work, or have sublet it to other contractors.

Each of the grading contractors is well equipped with modern excavating, hauling and compacting equipment. This includes tractor-drawn scrapers and rubber-tired hauling units, crawler shovels and draglines, sheepsfoot rollers, crawler bulldozers for spreading and pusher work, and compressors and wagon drills for work in rock cuts requiring blasting.

Precision Blasting Operations

The rock blasting operations in the large rock cut, seen during a recent inspection trip over the cutoff, are unusual in the degree of precision being achieved in loosening the rock to the desired side slopes with a minimum of finishing work. The material in this cut consists of alternate layers of rock and shale. Forty per cent powder is used in the rock and 20 to 30 per cent in shale. In the drilling work relatively small bits are used and the holes are spaced close together, the objective being to achieve a high degre of fragmentation. The accuracy in blasting is attributed to the use of delayed action caps and a firing pattern including four lines of holes with a corresponding number of delays, each of 50 milliseconds.

Subballast on the cutoff will consist of 6 in. of screenings topped by 12 in. of blast furnace slag under the ties. No. 4 or 5 creosoted ties, 8½ ft. long, are being used, and the rail that has been selected for the line is the 112-lb. torsion-resisting section. About 28.5 miles of track have already been laid at the easterly end of the cutoff.

On that section of the cutoff that more or less follows the alinement of the Carrollton branch it has been necessary to do considerable shifting of the existing track. In some places the track has been shifted as much as 52 ft. This work is done by first raising the track out of the ballast by a power jack and then pushing it laterally with a bulldozer. When it has been moved to the final alinement the track is raised 3 in. on sand ballast and shovel tamped. As much as a mile of the track has been shifted in one day. Eventually this old track will be removed in favor of the new construction.

All engineering work involved in the construction of the Centennial cutoff is being carried out under the general direction of H. R. Clarke, chief engineer of the Burlington lines, and under the direct supervision of H. A. Aalberg, assistant chief engineer. F. O. Schafer is field construction engineer, and A. J. Strobel is assistant construction engineer. For immediate supervision over the construction operations four residencies have been established. Resident engineers are B. A. Steffarud, F. R. Lieber and N. O. Hill. In addition to being assistant construction engineer Mr. Strobel is also in direct charge of the fourth residency. D. V. Zeis is office engineer in charge of the field office, at Chillicothe, Mo., and L. R. Hall is construction roadmaster in charge of the track work.

C. R. Lennertz is the soil analyst, and K. B. Woods, professor of highway engineering at Purdue University and head of the Purdue Highway Research Foundation, is the consultant on this work. The prime grading contractors are: Cameron-Joyce, Keokuk, Iowa (Schedule I); John P. Abramson Company, Des Moines, Iowa (Schedule II); and List & Clark Construction Company, Kansas City, Mo. (Schedule III). Part of the grading work on Schedule III has been sublet to the Perry-McGlone Construction Company, Kansas City.

The extensive bridge and culvert work involved in the cutoff construction will be described in a later issue.

"Shimmy" in Passenger-Car Trucks

Phenomenon investigated in tests with a laboratory car—Source, wheel-tread wear; the cure, restraint of truck angular motion

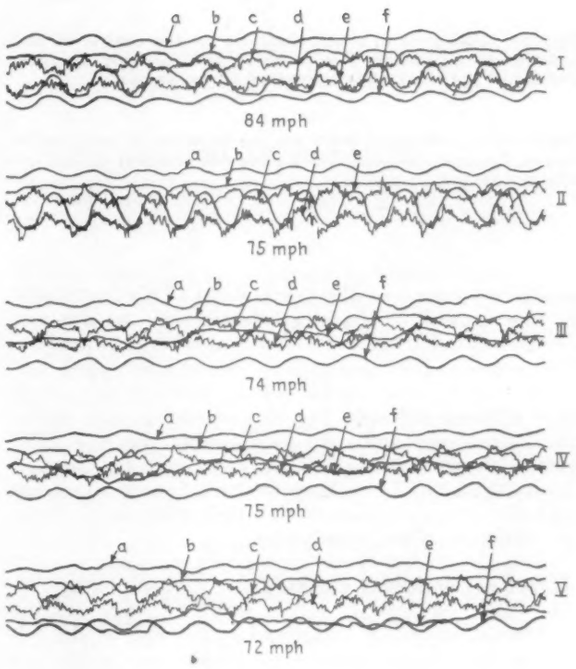
[*In a paper presented at the semiannual meeting of the American Society of Mechanical Engineers held at St. Louis, Mo., June 19-23, 1950, S. G. Guins, project engineer, Office of Research Consultant, Chesapeake & Ohio, described a series of tests investigating the causes of "shimmy" in the riding of passenger cars and presented conclusions derived from them. This article is taken from Mr. Guins' paper.*—EDITOR]

A series of tests were conducted on the Pere Marquette district of the Chesapeake & Ohio to determine the causes and cures of "shimmy" in the riding of passenger cars. The data secured are conclusive that this type of truck motion can be controlled and even prevented by the introduction of suitable angular damping between the truck frame and the car body.

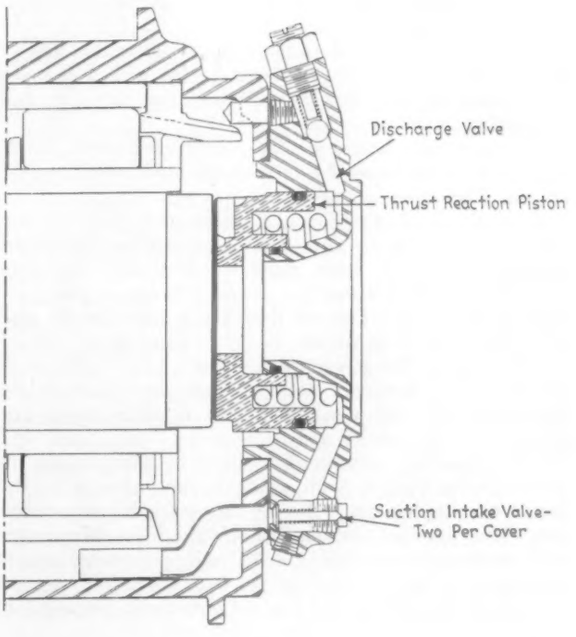
The problem is illustrated by the ride-recorder chart shown in one of the illustrations, in which are shown the lateral displacement of the axle with respect to the journal box and of the box with respect to the truck frame, the angular displacement of the truck about its center pin, the lateral accelerations of the two ends of the truck and the combined effect on the lateral acceleration of the car body. The test records show a frequency of these oscillations from 2.8 to 3.7 cycles per sec. and that this is independent of speed. Furthermore, these conditions usually do not appear until the wheels are worn (25,000 miles when new wheels have A.A.R. taper treads and 35,000 miles for new wheels with semicylindrical treads) and until the train speed is over 63 m.p.h.

As the problem was new, it was decided to make as thorough a study as possible. The Budd research car was engaged and instrumentation provided to take 24 separate measurements. An attempt was made to control most of the operating variables so as not to make changes in more than one variable at a time.

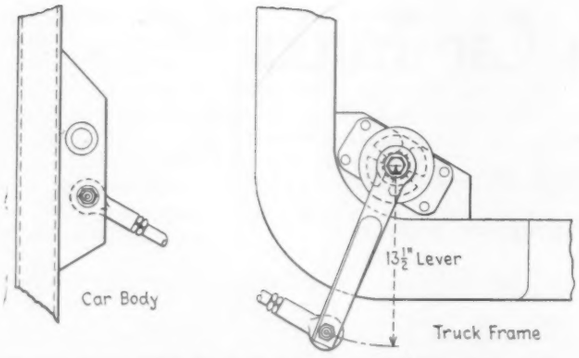
A special train was used for the test. It consisted of a diesel-electric locomotive, a coach, the test car, and a parlor car. This order was kept the same as much as possible throughout the tests. The direction of motion was kept constant by turning the train on Y's at both ends of the test section. All tests were made on the same section of track. No maintenance was done on this section during the tests. Only the test crew occupied the test car during the tests, thus keeping the weight constant. All tests were conducted on clear days. Water



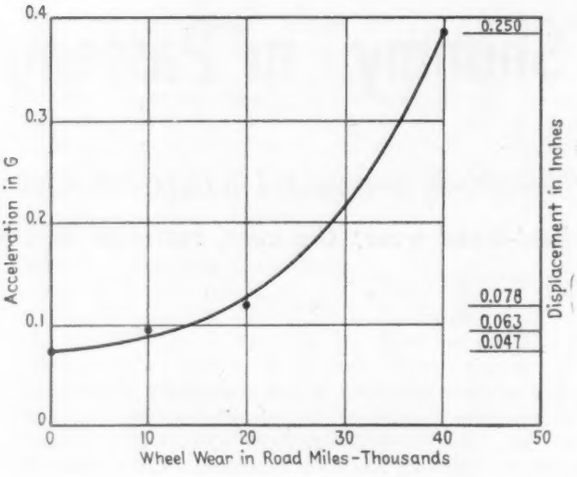
Top—Ride-recorder chart shows the effect of hydraulic thrust covers of the journal boxes on the action of a truck in shimmy



Below—Schematic drawing of the hydraulic thrust cover applied during tests to control lateral movement of the truck



Above—Application of shock absorbers for the control of angular truck movement. Two mounted at diagonally opposite corners of the truck were connected to the car body



Right—Effect of wheel wear on the behavior of the truck-frame. Frequency of oscillations remained constant at 3.5 cycles per second

could be sprayed on the track ahead of the test truck to give a quick comparison between rides on wet and dry rail. A test set of worn whels was selected to produce the motion under investigation. Several other wheel sets were tried to compare the action produced by wheels after different mileages. Two sets of springs with different lateral constants were used during the tests. The center of gravity of the test car could be changed from 50 in. to 52 in. above the rail. Several shock absorbers were tried to determine their effect on the type of vibration under investigation.

Effect of Variables on Ride

Attempt was made to determine the effect of the following factors on shimmy: the lateral rate of the car suspension, vertical location of the center of gravity, lateral damping, wheel wear, and effect on the car ride of water and sand on the track. The following conclusions are based on the records and on the observations of the test crew:

Direction of motion does not seem to affect the riding quality of the car except when connected with a change of location in the consist, and then the latter is the controlling factor.

Increasing the height of the center of gravity by 2 in. produced the hardest ride with the most violent oscillations. The cause is not clear.

Vertical shock absorbers improve the ride of the all-coil-spring truck. This was demonstrated by tests during which they were removed. Not only was the vertical ride affected, but the lateral ride was worse too. Lateral shock absorbers as they are conventionally applied have no effect on the quality of the ride.

Wheel wear has a very definite effect on the lateral oscillations of the car. Both the tests and observation indicated that the truck will not oscillate until the wheels are working to a definite pattern in a truck set. Breaking up this combination either by replacement of one axle by another with newly ground wheels or by one from another car will stop the truck from oscillating. This practice, established on the Pere Marquette district streamliners, doubled the mileage between wheel turnings.

Lateral clearance of the journal boxes was investigated in relation to lateral oscillation of the truck. Reductions from the standard clearance gave a better ride for a short time, after which the oscillations became violent again.

Tests were also made with a truck utilizing a Pennsylvania Railroad suspension system. This consists of a combination of elliptical and coil springs without auxiliary shock absorbers and with the spring plank and bolster connected by a lateral tie rod. This restricts the lateral motion of the bolster springs and places it all in the swing hangers. It proved successful in breaking up lateral oscillations and permitted a wheel life of over 100,000 miles between refacings. It made the vertical ride slightly rougher, however, transmitting more high-frequency impacts.

Truck Motion During Shimmy

Lateral oscillations of the car body can be produced by the yawing or nosing of the truck, thus producing lateral translations of the bolster and, consequently, of the car body. They can also be produced by pure lateral oscillation of the truck between the rails. Any combination of these two motions can cause the same body motion.

The study of the records of the accelerations of the two end transoms indicates a phase difference of about 85 deg. when unrestrained. This shows that the lateral movement of the truck is caused by yawing and pure lateral sliding. If the truck was yawing only, the movement of the end transoms would be 180 deg. out of phase. If the movement was pure sliding, the two acceleration curves would coincide.

The outstanding characteristics of shimmy shown by the records are (1) that its frequency and amplitude were generally independent of any physical components of the truck suspension; (2) that the forces causing the motion originated at the point of contact of the wheel and rail; and (3) that the resultant motion is a combination of angular and pure lateral oscillations.

Three possible cures were proposed, one to control lateral motion and two to control the angular motion.

Hydraulic Thrust Covers

The first measure tried was a hydraulic thrust cover for the journal box. This was designed by the railroad and built by the Hyatt Roller Bearing Division of Gen-

eral Motors Corporation. It consists of a piston in the box cover operated by the axle which permits a total lateral movement of 1 in. damped by pumping oil through an orifice. This device was applied in an attempt to absorb the energy that produced shimmy as close to its point of origin as possible. Obviously, it could control only the lateral component of the motion.

When the covers were first tested in the truck there was no change in the action of the truck parts regardless of the setting of the adjustment screw. With the passages enlarged as much as the castings permitted, the tests were run over with the results shown in one of the illustrations.[1] While the results were not as expected, the "hunting" of the axle was eliminated — see trace (e) in the ride-recorder graph — for adjusting-screw openings of one and one-quarter and one and one-half turns, and the phase difference between the end transom accelerations — traces (c) and (d) — became nearly 180 deg., indicating that the covers removed purely lateral translation from the truck frame. The lateral accelerations of the car body — trace (a) — were reduced slightly.

Angular Control Devices

Two devices were tried to control angular motion of the truck. One was the Symington-Gould spring-loaded side bearing, the truck set of which carried 4,000 lb. of car weight. These were tried as supplied and also modified by attaching molded-type brake lining on their top surfaces. Application of this device introduced additional torsional damping in the truck.

The second device consisted of two Houde shock absorbers, Model FBBRC, mounted on the end transoms at diagonally opposite corners of the truck frames and connected to opposite side sills. A sketch of this installation is shown. A very hard setting of the shock absorber was required to stop the shimmy in the truck that had already developed a violent shimmy condition.[2] For a maximum truck angular displacement of .855 deg. at 3.5 cycles per second and a leverage ratio to the shock absorber of 6.62, the maximum angular velocity of the shock-absorber shaft is 126.2 deg. per sec., giving a maximum restricting torque of 32,500 in. lb. The damping coefficient for the installation is 36,000 in. lb. per deg. per sec.

A study of the records obtained in the second series of tests, where wheels of various mileages were tested, produced evidence that all the wheels had a tendency to shimmy at 3.5 cycles per second, but that the amplitude varied in accordance with age, increasing with wear. In the graph of wheel wear in road miles the points for which the displacement in inches is shown are plotted from the test charts and indicate the general trend of the build-up of negative damping force with wear.

This observation led to the conclusions that even a small amount of angular damping, when applied to new wheels, might prevent the wheels wearing to a pattern which leads to shimmy. The new wheel that indicated an amplitude of about one-tenth of the maximum measured would, therefore, require only one-tenth the angular damping.

This is pretty well substantiated by the results obtained on the two trucks that are being service tested on the Pere Marquette streamliners. On these are Houde shock absorbers set to produce about 750 in. lb. per deg. per sec. damping coefficient, and spring-loaded side bearings which were modified by adding brake lining to the top surfaces and produce about 500 in. lb. per deg. per sec. damping coefficient.

The indications, therefore, are that very soft angular control, if applied to a truck with new wheels, will prevent any tendency for the truck to shimmy. This can be done without any danger of unsafe operation on curves and crossovers from excessive angular restraint. The fear of this possible danger has prevented earlier application of angular damping devices.

[1]Calibrated at a rate of 76 cycles per minute and ½ in. travel, the pressure in p.s.i. was 70 with the adjustment screw open one-half turn, slightly under 35 with one and one-quarter turns, about 28 with one and one-half turns, and 20 with two turns.

[2]The best results in reduction of lateral accellerations of truck transoms and the car body were obtained with a "hard" setting of the Houde shock absorbers and settings of the hydraulic journal-box covers of 1¼ or 1½ turns open.

"MEN, MONEY, MATERIALS"

(*Continued from page* 112)

in 1935 the I.C. worked out an elaborate program to cut drastically the number of yardings per car by refining preclassification and promoting "main tracking" of freight trains. This pattern has been continued in the main, with revisions to reflect a large increase in volume of traffic.

Since the close of the war, the I.C has invested more than $12 million in new passenger cars and locomotives. Included in these purchases were a new "Land O'Corn" (Chicago-Waterloo); "Green Diamond" and "Daylight" (Chicago-St. Louis); "City of New Orleans" (Chicago-New Orleans); and a second set of streamlined equipment for the "City of Miami" (Chicago-Florida points). In 1930, no I.C. train had a scheduled speed of 60 m.p.h., start-to-stop, on any operating district. By 1949, there were 104 such district runs. The Chicago-New Orleans streamliner, "City of New Orleans," the longest so-called daylight run in the country, is also one of the country's biggest earners, with a high proportion of intermediate on-and-off traffic. The swank, all-Pullman "Panama Limited" between the same cities was the last new streamliner in the country delivered before the "freeze" of World War II, and has a reputation for comfort and good food.

The I.C. is the second largest carrier of commuters in the country. Its several hundred electrified suburban runs use a virtually exclusive plant involving more than 130 miles of main line track, and carry well over 100,000 passengers a day. Some 32 per cent of the road's passenger revenues derive from this service.

Every war, including the Civil, has brought an extraordinary traffic load to the I.C. Its peak year in traffic, prior to World War II, was 1927, with 63 million tons carried. In 1943, its war peak, it carried over 80 million, the exact increase being 27 per cent. This compares with an increase of 25 per cent in tons carried by all roads in 1943 (peak war year for all railroads) compared with 1926, their highest prewar year. C. J. Corliss, author of "Main Line of Mid-America," points out that, if its normal ratio of traffic to that of all railroads had prevailed, the I.C. would have carried about 1,311,100 troops during World War II. Actually, in the period, 1942-1945, it transported 4,732,000 troops in special groups alone. Its officers believe it is far readier for a war load this time than in 1941. Observes President Johnston: "An efficient peacetime railroad makes an effective military carrier."

Ben J. Tarbutton Assumes Central of Georgia Presidency

Ben J. Tarbutton

Earle F. Bidez

Succeeds Merrel P. Callaway, who will remain chairman; E. F. Bidez elected vice-president

The Central of Georgia, with a record of more than 100 years of service, faces the future with confidence. It is well manned, efficiently officered, adequately equipped, and is in position to render dependable transportation. It gives me great pleasure to have a part in working out its destiny. This I undertake with full knowledge that any individual efforts of my own will be successful only with the cooperation of my fellow employees and support of our patrons. This is our hope and we shall endeavor to continue to merit the esteem and confidence of the traveling and shipping public."

Ben J. Tarbutton, who made that statement upon his recent election as president of the Central of Georgia—briefly reported in *Railway Age* of January 29, page 38—has long been prominent in the civic, industrial and political life of his native city and state—Sandersville, Ga. He can, moreover, look back upon more than a century of family ties with the railroad he now serves as president, for his maternal grandfather, Joseph Bangs, of Springfield, Mass., settled in Sandersville in 1843 after having gone south in the 1830's to participate as a surveyor and construction engineer in the building of the C. of Ga. from Savannah to Macon.

Financed Industries

Mr. Tarbutton himself was educated in the public schools of Sandersville, and matriculated at Emory College, Oxford, Ga. (now Emory University, Atlanta). After leaving college he went to work in the several enterprises owned by his family, which was farsighted enough to realize that industry was beginning to offer greater opportunities than agriculture. As a result, they purchased large acreage in the immediate vicinity of Sandersville and participated in financing numerous industries, such as clay processing plants, feed mills, woodworking enterprises and the like, while continuing banking and wholesale grocery operations.

These activities afforded a heavy volume of traffic for the Sandersville Railroad, another Tarbutton property. The present C. of Ga. president, liking railroading, was much interested in operation of the 3-mile line—which connects with the C. of Ga. at Tennille—and gave an increasing amount of his attention to it. When there was a vacancy in the general managership, he took over the position, and in 1922 became president of the short line, a position he still holds. Of vigorous physique and temperament, it is said that at times, even in recent years, he has doffed his coat and helped unload a box car to avoid delay in delivery of a shipment.

Mr. Tarbutton has been honored repeatedly by his home people. He has been state senator, and also representative for two terms in the Georgia house of representatives. He is continuing his service there for the present term, and is also mayor of Sandersville. Intensely interested in industrial and agricultural development of the southeast, Mr. Tarbutton believes that increased productivity in the territory is its key to progress and prosperity. He has always encouraged improvement of livestock, better forestry, diversified crops and development of natural resources.

Callaway Continues as Chairman

Merrel P. Callaway, whom Mr. Tarbutton succeeds as president of the C. of Ga., will continue as chairman of the board, which office he has filled since reorganization of the road on July 1, 1948. He had served also as president since the death of Marion J. Wise in April, 1950. A photograph of Mr. Callaway, and a detailed resume of his career, appeared in a feature article in *Railway Age* of May 13, 1950.

Earle F. Bidez, whose election as vice-president of the C. of Ga. also was announced in *Railway Age* of January 29, was born in Carrollton, Ga., on October 22, 1897. He entered railroad service on October 14, 1917, as a clerk in the C. of Ga.'s accounting office at Columbus, Ga., and has since been in continuous service with the same road. Mr. Bidez has been, successively, clerk, traveling accountant, traveling auditor, division accountant, assistant auditor of disbursements, assistant to comptroller, and, since 1948, executive assistant on the staff of the road's president, which position he held until his election as vice-president. He is also executive vice-president and a director of the Ocean Steamship Comany, a C. of Ga. subsidiary.

GENERAL NEWS

Spreading "Sickness" Among B. R. T. Switchmen Halts Many Railroads, Slows Defense Program

"Epidemic" more severe in west as Wilson radio talk brings some men back to work in east—Livestock and perishable traffic virtually paralyzed—Injunction hearings at Chicago bring out evidence of advance planning and "intimidation"

As of February 7, the mass "illness" of Brotherhood of Railroad Trainmen switchmen continued to spread across the country, slowly paralyzing both transportation and industry. Although the B.R.T. "illness" seemed to be abating in the East at press time, following a February 5 radio appeal by Defense Mobilizer Charles E. Wilson, it appeared to be growing more severe along the West Coast, as trainmen, enginemen and firemen joined the walk out. The U. S. Army, which has technical control of the railroads, in cooperation with the Federal Bureau of Investigation, is pressing contempt citations against the B.R.T. for its refusal to abide by an injunction ordering the men to work. At federal court hearings in Chicago relating to the B.R.T. work stoppage of last December, several "sick" switchmen testified that they attended union meetings at which the "sickness" was discussed, and stated that intimidation was used to enforce compliance. Government lawyers expect this kind of revelation to bring about a quick return to work.

Food Supplies Dwindling

The strike affected well over 50 railroads and 110 cities at its high water mark, and severely restricted rail shipments of livestock and perishables throughout the country. Members of the Brotherhood of Locomotive Engineers, and of the Brotherhood of Locomotive Firemen & Enginemen, although not reporting off "sick," in many instances were apparently sympathetic to the B.R.T. cause and in some instances refused to handle over the road trains not switched by union crews. This resulted in the unusual situation whereby the Western Pacific had to embargo perishables and livestock, even though its switchmen (represented by the Switchman's Union of North American) were all reporting for work. Other railroads, both in the east and the west, had similar trouble with road crews. The Great Northern was slowed by striking employees on connecting lines and at joint facilities, even though all of its S.U.N.A. switchmen were at work. The Union Pacific, the Pennsylvania and other roads have had conductors, firemen and trainmen reporting off sick.

As the walkout continued into its ninth day, shortages of fresh fruits, vegetables and meats were beginning to appear in eastern cities. And the prices of all fresh produce began to climb markedly, reflecting the scant supplies on hand. In California, many growers and packers of fresh and frozen fruits and vegetables were unable to obtain empty cars for loading, so they ceased shipments. They were also reported to be afraid of possible spoilage should any of the shipments be caught by "illness" en route. Likewise, shipments of packaged nonperishable foods slowed or, in some cases, stopped entirely. At a warehousemen's convention in Boston, it was stated that warehouse operators have ample stocks of food on hand to last several days, but that there would be delays in replenishing supplies once used up.

With movement of grain, livestock, and feed all but at a standstill, flour mills began to cease grinding, and stock yards receipts fell off strongly. Observers in the food industry believed the effects of the strike will be felt for several weeks afterwards. Dislocation of cars resulting from the strike will have to be corrected — and it will take several days' time — before many roads can begin to accept shipments in normal proportions. Difficulty in returning cars to Canada has resulted in some car shortages there, particularly at paper mills.

Shippers and receivers of all kinds, faced with shutdowns because of lack of rail transportation, tried to turn to substitute truck movements. But the common carrier trucking industry, reported to be operating at full capacity before the strike, was able to accept only a small portion of the strike-bound shipments. The Ford Motor Company had closed seven plants, and General Motors 11, as a result of the strike. Effects on the steel industry were serious. United States Steel reported that the first nine days of the strike resulted in loss of 50,000 tons of steel production in its plants. And plant closedowns were being reported daily throughout the country as raw materials were used up or as shipping

Truman Directs Army to Act on Walk Outs; Strikers Get Order to Return or Lose Jobs

President Truman, on February 8, directed the secretary of the army to take "appropriate action" to end the walk outs of "sick" switchmen, and the secretary followed through promptly with an order calling upon the strikers to return to work by 4 p.m. Saturday, February 10, or be dismissed from their jobs with resultant loss of seniority. The President's action was announced by him at a news conference on the morning of February 8.

He opened the conference by reading this statement:

"I have been gravely concerned about the interference with essential military and civilian railroad transportation. It is bad enough in other times; it is intolerable in an emergency.

"On the other hand, I have been proud of the vast majority of railroad workers who have stuck to their jobs in spite of their grievances. Consideration is also due the strikers who returned to work when advised of the danger of the tie-up.

"However, there are still some ill-advised or irresponsible men who are disregarding the emergency needs of their country.

"It is essential that precautions be taken against recurrences of such threats to our national security.

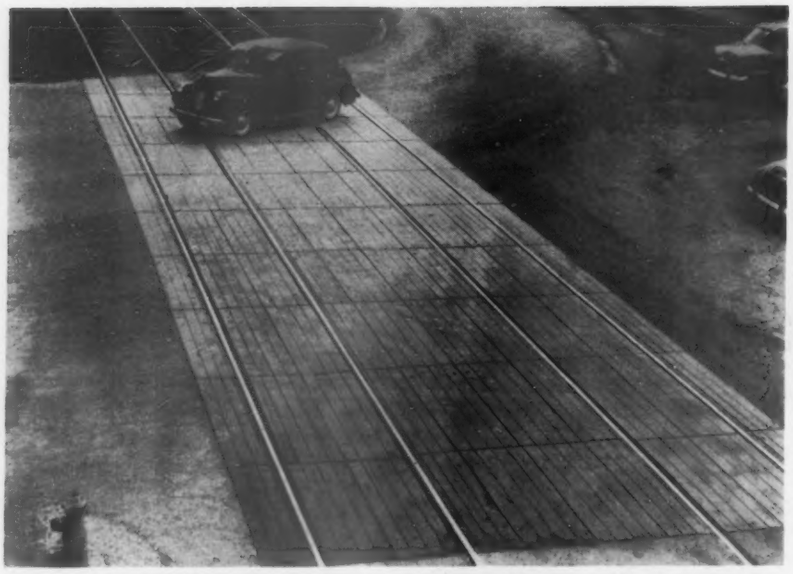
"Accordingly, I have directed the secretary of the army to take appropriate action immediately."

The Army's ultimatum, embodied in a six-page order, was issued on behalf of Secretary Pace by Assistant Secretary Bendetson, who has been in charge of operating the railroads since they were seized by President Truman last August 27.

In addition to setting the deadline for the strikers to return to work or face loss of their jobs, the ultimatum said that, if the strikes do not end, the Army will seek from Congress legislation "to assure the resumption and continuance of normal rail service and the settlement of the dispute between the parties."

Meanwhile, the Army will give members of the four brotherhoods an interim wage increase, pending final settlement of the controversy.

This interim advance, which will be retroactive to October 1, 1950, will be 12½ cents per hour for yardmen and yardmasters, and five cents per hour for road men.



IN THIS TIMBER PANEL GRADE CROSSING, prefabricated by the Koppers Company for the Mathieson Chemical Corporation, Saltville, Va., are 15,000 bd. ft. of pressure-creosoted lumber. Measuring 100 ft. long, and consisting of 105 panels and 42 flangeway fillers, the crossing is one of the first of its type to be installed by an industrial plant. The tracks shown above are part of a branch line of the Norfolk & Western

platforms became packed to capacity.

Wherever possible railroads allowed receivers access to cars consigned to them but stalled in neighboring yards. Many receivers trucked their freight from freight yards to their plants and in that manner managed to keep running.

Suburban Nightmare

On Monday, February 5, the strike began to paralyze New York's network of suburban passenger services as the New York Central, the Central of New Jersey, the New York, New Haven & Hartford, and finally the Erie, were forced into wholesale cancellation, and the Pennsylvania and Lehigh Valley into partial cancellation, of suburban passenger trains. Commuters crammed every bus, subway, street car and highway in an endeavor to get to and from work on February 5 and 6, but New York area commuter travel and many long-distance trains resumed normal operation on February 7.

In the Chicago area the effect on suburban service was less severe. Although the Chicago & North Western and the Chicago, Milwaukee, St. Paul & Pacific had to cancel some suburban trains, they were able to confine their cuts to off-peak trains. Volunteers from general offices and supervisors were able to do enough switching to keep rush-hour trains moving. However, the issue was complicated by the fact that employees of the Chicago, Aurora & Elgin were out on an entirely independent strike over wages and hours.

Effects of the walkout on through passenger services were felt most heavily in the east. The New York Central and the Pennsylvania made substantial reductions in their through east-west services, and for a while the New Haven discontinued through Boston-Washington, New York-New England and New York-Montreal operations. Between Chicago and St. Louis, the Illinois Central, the Gulf, Mobile & Ohio and the Wabash temporarily discontinued about 60 per cent of the total passenger service. The Erie announced discontinuance of two New York-Chicago trains just as Mr. Wilson was pleading by radio and television for strikers to return to work.

In the far west, all commutation service was out on the San Francisco peninsula, and effects of the strike were being felt on some Pacific Electric lines in and around Los Angeles. The "Gold Coast," between Chicago and San Francisco via the C.&N.W., the U.P., and the S.P., was annulled.

Volunteer Crews

In an effort to keep perishable traffic moving and to supply essential industries as far as possible, most roads formed volunteer switching crews from general office employees, and supervisory crews from available supervisory staff. In many cases these crews worked long hours, to keep some essential traffic moving. To sustain volunteer and supervisory crews at its huge Proviso yard, the Chicago & North Western, for example, parked a dining car and a sleeping car in the yard for their use.

A measure of the extent of the strike can be obtained from the following figures showing the number of switchmen—*in struck yards only*—normally assigned and the number actually at work in territory including, and west of, Chicago, St. Louis and New Orleans.

	Normally assigned	Actually working
Jan. 31	6,245	2,151
Feb. 1	6,324	1,163
Feb. 2	5,943	832
Feb. 3	8,823	1,045
Feb. 5	9,063	1,027
Feb. 6	9,337	1,686
Feb. 7	5,706	1,033

At Washington, D.C., where the strike had affected operations at the passenger terminal, the switchmen returned to work; and the situation last week was described as normal. Potomac Yard, which was affected by the December walkouts, was not involved this time. The switchmen there remained on the job.

Statements on Strike

The back-to-work movement became something like a trend after Mr. Wilson made his appeal to the striking switchmen, following appeals by the National Mediation Board and W. P. Kennedy, B.R.T. president. Meanwhile, the strike had been denounced in a February 2 statement issued at the White House by President Truman's press secretary, Joseph Short; and in a February 5 statement broadcast by President William T. Faricy of the Association of American Railroads.

Director Wilson of O.D.M. called the strike a "terrible thing," which is "paralyzing our country at a time when . . . we are in the greatest danger in our history." While he asserted that the railroadmen were entitled to use "every legitimate means" to get "what they think is fair," he nevertheless insisted that "a strike against the whole nation in a time of great peril is not a legitimate means."

"Right now," the O.D.M. director also said, "large shipments of rations for our troops in Korea are sitting on loading platforms in Chicago. They can't be moved because the railroads aren't running."

Mr. Wilson went on to note the impact of the strike on other industries. The walkout "is making our whole productive system grind to a stop," he said. He added: "The Communists could not hope to be this effective if they started a full-scale campaign of sabotage."

A.A.R. President Faricy's broadcast of the same evening recalled that, during World War II, the railroads carried 90 per cent of the war freight and 97 per cent of the organized military travel. The "brilliant record" railroadmen made at that time "is in danger of being thrown away in America's hour of need," Mr. Faricy said.

"Already," he continued, "the White House has said with complete justification that the strike . . . is directly injuring the national security. . . Under any circumstances such action on the part of American citizens who did so much to help our fighting men win World War II would be hard enough

to understand. But when we consider that the national leaders of these men negotiated and signed an agreement at the White House just before Christmas, carrying a substantial raise with back pay to October 1 of last year, their action becomes intolerable."

The statement issued at the White House by Presidential Press Secretary Short said that the position now taken by the union leaders indicates that they signed the agreement of December 21 "in bad faith." Also, Mr. Short asserted that the union leaders had "stated that the employees would remain at work during government operation." He said further that the union leaders "are now attempting to escape responsibility" for the December 21 agreement.

The brotherhood chiefs, Mr. Short added, "did not fully explain the agreement or recommend it to their union committees." It was because "they now say they had no intention of recommending it" that Mr. Short accused them of having signed "in bad faith."

"Surely," he also said, "the railroad workers have learned by now that the railroad industry of this country is too vital to our national existence to be shut down. . . The President . . . believes that when all of the members of the unions and the public consider all these facts thoroughly, the men who are striking will go back to work."

Mediation Proceedings

Mediation proceedings in the dispute were resumed February 3 when the National Mediation Board brought the union leaders and representatives of management together for their first joint meeting since the December 21 agreement was rejected by the unions. Another joint meeting was held on February 4. During the next three days, members of N.M.B. met with the union leaders, but no joint sessions were held.

The carrier representatives at the joint sessions of February 3 and 4 were chairmen of the three regional conference committees—D. P. Loomis for western roads, L. W. Horning for eastern roads, and C. D. Mackay for southeastern roads. Before entering the joint sessions, they made it clear that they considered the dispute settled by the December 21 agreement; and that the only additional matters to be considered were those involved in translating the memorandum of agreement into a formal pact.

This position of the carrier representatives was set out in a January 25 letter which Messrs. Horning, Loomis and Mackay sent to Chairman John Thad Scott of N.M.B. When the carrier representatives got N.M.B.'s call to the joint conferences, they wired Mr. Scott to suggest that the board should "make clear" to the union leaders the position of the carriers as set out in the January 25 letter.

"The . . . carriers . . . " the letter said, "are willing to meet the organizations at any time for the purpose of carrying out the provisions of the memorandum of agreement signed at the White House on December 21, 1950. As the board members who were present will recall, the understanding at the time of signing was that the parties would meet in Washington about January 15, 1951, to work out the details and translate the memorandum of agreement into a complete formal agreement.

"The carrier representatives have been in Washington since January 8, ready to meet the organizations at any time for that purpose. If the board . . . feels that it can be helpful in assisting the parties to work out the details of a complete formal agreement carrying out the provisions of the memorandum of agrement . . . the carrier representatives will be happy to have the board participate in the discussions."

There was much talk about the strike last week in both the Senate and House. The House speeches included one by Representative Andrews, Democrat of Alabama, who also introduced a bill (H.R.2380) to amend the Selective Service Act to provide for induction into the Army of persons quitting work for which they have deferment from the draft.

Also in Washington was the court hearing scheduled for February 8, at which the B.R.T., its president, Mr. Kennedy, and other officers were to appear to show cause why they should not be punished for contempt of court. The proceeding was in the United States District Court for the District of Columbia. Brought by the Department of Justice, it is based on the still-effective restraining order which the government obtained against the B.R.T. in December, when there was a previous epidemic of "sickness" among switchmen members of that union.

Meanwhile, the strikes caused the Defense Transport Administration to issue a February 6 order directing for-hire motor carriers to give preference and priority to freight shipments for the armed services, the Atomic Energy Commission, and the U. S. mail service. The order was General Order DTA-1.

Court Hearings

In the meantime, the U. S. Department of Justice, and the F.B.I., acting on behalf of the Army, were seeking to have the B.R.T. and 53 of its officers held in contempt of court for their failure to obey an injunction issued in connection with the first epidemic of "sickness" last December. In a hearing before Federal District Judge Michael L. Igoe in Chicago, the government sought to prove that last December's sickness was not "spontaneous," but was actually an organized, directed strike movement. The B.R.T. supported its contention that the walkout was purely spontaneous and beyond its control.

At press time the government had succeeded in establishing testimony to the effect that the proposed sickness was discussed at union meetings. The government is also citing the timing and extent of the "sickness" as evidence that it could hardly be called "spontaneous" or "unorganized." This hearing was expected to continue for another day or two, preceding hearings on the contempt action arising out of the latest walkout.

A NEW THREE-TIER TROOP SLEEPER has been built by the Pullman Company for the Army Transportation Corps. Converted from a Pullman tourist car, the new sleeper is divided into 12 sections with three berths to a section, plus a drawing room. It will berth 40 men. One experimental model of the car has been built, and is now being tested on troop movements. According to the T.C., "several" of the cars will probably be purchased for military use

Widespread Embargo Action

The "sickness" made necessary many important embargoes, some of which applied to entire railroads. Notices on hand up to February 7 included the following more important actions relating either to roads suffering work stoppages or congested by reason of tie ups on connecting lines. In some instances exceptions were permitted on issuance of authority from a designated officer of the road involved. Among the important roads and key points affected were:

Atchison, Topeka & Santa Fe—carload and l.c.l. livestock and perishables from connections. System-wide.

Atlanta & West Point—At Atlanta.

Atlantic Coast Line—l. & p. for beyond line, except to F.E.C.

Baltimore & Ohio—Chicago, East St. Louis, Philadelphia, Cincinnati, Indianapolis, and Springfield, Ill.

Boston & Maine—Boston, and all stations Boston to Portsmouth, N. H., North Wilmington, Mass., North Billerica, Little-

ton and Berlin, including all branches; also all local freight to most points between Rotterdam Jct., N. Y., and White Creek.

Central of Georgia—Atlanta and Chattanooga.

Central of New Jersey—Jersey City and New York.

Central of Pennsylvania—Wilkes-Barre and Scranton.

Chesapeake & Ohio—Chicago, Toledo, Buffalo, Manitowoc, Wis., and Kewaunee.

Chicago & Eastern Illinois—Chicago; l. & p. system-wide.

Chicago & Illinois Midland—system-wide, including passenger.

Chicago & North Western—Chicago, Racine, Wis., Madison, Kenosha, Milwaukee, Fond du Lac, Waukegan, Ill., Peoria, and Sioux City, Iowa.

Chicago Great Western—l. & p. system-wide.

Chicago, Indianapolis & Louisville—Chicago and Hammond, Ind.

Chicago, Milwaukee, St. Paul & Pacific—Chicago, Racine, Madison, Milwaukee, Joliet, Ill., St. Paul-Minneapolis, Minn., Terre Haute, Ind., Tacoma, Wash., and Seattle.

Chicago, Rock Island & Pacific—all traffic for connections.

Elgin Joliet & Eastern—System-wide.

Erie—Buffalo, N. Y., Niagara Falls, Lockport.

Grand Trunk Western—Detroit, Chicago, Milwaukee, Durand, Mich., Saginaw, Bay City and Owosso.

Great Northern—Seattle, Tacoma, Vancouver, Wash., and Wishram.

Gulf, Mobile & Ohio—Peoria and East St. Louis.

Illinois Central—Chicago, East St. Louis and Peoria.

Illinois Terminal—System-wide.

Louisville & Nashville—Knoxville, Tenn., Atlanta, East St. Louis, St. Louis and Birmingham.

Minneapolis, St. Paul & Sault St. Marie—Mundelein, Ill., Chicago, Burlington, Wis., Waukesha, Fond du Lac, Milwaukee, Oshkosh and Manitowoc.

Missouri-Kansas-Texas—Dallas, St. Louis and Kansas City.

Missouri Pacific—St. Louis, East St. Louis, and Dupo, Ill.

Nashville, Chattanooga & St. Louis—Chattanooga, Tenn.

New York Central—Lines West.

New York, Chicago & St. Louis—Chicago, St. Louis, Peoria and Toledo; and l. & p. system-wide.

New York, New Haven & Hartford—Boston.

Norfolk & Western—Cincinnati.

Northern Pacific—Minneapolis, St. Paul and all stations Missoula, Mont., and west; Butte, Mont.

Northwestern Pacific—all stations north of Hopland, Cal.

Pacific Electric—All l.c.l.

Pennsylvania—stations Hobart, Ind., and Hartsdale to Chicago, inclusive; Philadelphia suburban area; stations Camden, N. J., to Toms River; stations Collinsville, Ill., to St. Louis; stations Trenton, N. J.,-South Amboy area; stations Walbridge, Ohio, to Toledo; stations Wilmington, Del., to Perryvile, Md.; Jersey City and New York; stations Clare, Ohio, and Norwood to Cincinnati.

Reading—Coal for Port Reading, N. J.; all traffic to points east of Phoenixville, Pa., and Lansdale and west of West Trenton. N. J.; all shipments via Park Jct. or Belmont; Philadelphia.

St. Louis-San Francisco—St. Louis.

St. Louis Southwestern—l. & p. for connections; St. Louis and Dallas.

Seaboard Air Line—overhead l. & p. for connections; Jacksonville and Atlanta.

Southern—St. Louis, East St. Louis, Chattanooga, Cincinnati, Birmingham, and all stations Asheville, Knoxville and Atlanta divisions.

Southern Pacific — Portland, Ore., Eugene, Salem, Klamath Falls, San Jose, Cal., Watsonville, San Francisco, Oakland, Richmond, Stockton, Fresno, Los Angeles, Yuma, Ariz., and El Paso, Tex.

Southern Pacific of Mexico—All l. & p. destined to U. S. points.

Spokane, Portland & Seattle—Portland, Vancouver, Wash., and l. & p. system-wide.

Texas & New Orleans—Ennis, Tex., Dallas, Forth Worth and El Paso.

Texas & Pacific—Dallas and El Paso.

Toledo, Peoria & Western—all overhead traffic.

Union Pacific—Portland, Ore., Kansas City, Omaha, Neb., Council Bluffs, and Green River, Wyo.; l. & p. and l.c.l. from all connections.

Wabash—Chicago, Detroit, Decatur, Ill., St. Louis and Toledo.

Western Pacific—l. & p. system-wide.

Other railroads, operation of which was reported halted either in whole or in part, included the Alton & Southern; Belt of Chicago; Chicago, Burlington & Quincy; Chicago, St. Paul, Minneapolis & Omaha; Chicago, West Pullman & Southern; Colorado & Southern; Georgia; Indiana Harbor Belt; Kansas City Southern; Lake Terminal; Litchfield & Madison; Louisiana & Arkansas; Peoria & Pekin Union; Terminal Railroad Association of St. Louis; and Wheeling & Lake Erie.

Additional railroad centers affected by the strike included Altoona, Pa., Pittsburgh, and Chester; Bloomington, Ind., Evansville and Fort Wayne; Bluefield, W. Va.; Cleveland, Ohio, Columbus, Canton and Lorain; Houston, Tex; Las Vegas, Nev.; Memphis, Tenn.; Newark, N. J.; Pueb'o, Colo.; Salt Lake City, Utah; Savannah, Ga.; Spokane, Wash.; and Tucson, Ariz.

Return to work of switchmen on eastern roads had resulted, at press time, in easing of the embargo on bulk mail, and of the Railway Express Agency's embargo between 14 northeastern states and the rest of the country. Both embargoes, however, remained in partial effect.

83 Killed, Hundreds Hurt, In Woodbridge Wreck

Eighty-three persons were killed and several hundred—possibly more than 500—injured, when several cars of Pennsylvania passenger train No. 733, "The Broker," southbound from Jersey City, N. J., to Bay Head Junc'ion were derailed at a temporary overpass over Legion place, in Woodbridge, N. J., at about 5.41 p.m., February 6.

The overpass was part of a temporary track installed to facilitate building of the so-called New Jersey Turnpike, an express superhighway under construction between the northern and southern parts of the state, which will go under the P.R.R. Rahway-Perth Amboy line in Woodbridge. The trestle had been opened on the day of the wreck, subject to a speed restriction of 25 m.p.h. The injured engineman of the wrecked train, Joseph Fitzsimmons, first stated that he had been observing that restriction, but was subsequen'ly quoted as saying that his train was traveling 50 m.p.h. at the time of the accident.

The train, scheduled to leave Jersey City at 5.10 p.m., consisted of 11 cars. It normally carries around 900 passengers—principally commuters from New York to north Jersey shore points—but on February 6 it was carrying a large number of additional passengers because Central of New Jersey trains serving the same area had been cancelled by the switchmen's "sickness" strike.

Apparently the steam locomotive and one or two cars crossed the overpass before several following cars, in which most of the casualties occurred, were derailed. First reports stated that the timber overpass had collapsed under the weight of the train.

Interstate Commerce Commissioner William J. Patterson—to whom the commission's Bureau of Safety reports—announced that the commission would begin an ex parte investigation of the accident at New York at 2 p.m. on February 8. Other investigations were under way by the railroad; the state of New Jersey and its Public Utilities Commission; Middlesex county, in which Woodbridge is located; Woodbridge police; and the Federal Bureau of Investigation, which was said to be concerned about the possibility of sabotage in view of prevailing strike conditions.

The suggestion was advanced by a Middlesex county freeholder that the state might be responsib'e for "contributory negligence as far as any supervision was concerned" in the "hurry-up job" of building the overpass. Other officials, however, said the overpass was "in sound condition" and "not involved." The New York press, unofficially, seemed disposed to blame the accident on the speed of the train.

The Pennsylvania's first statement on the accident, issued the same evening, follows, in full:

"The westbound track from Rahway to Perth Amboy was put out of service today for the purpose of building a new bridge across the New Jersey Turnpike which is

Car Surpluses and Shortages

Average daily freight car surpluses and shortages for the week ending February 3 were announced by the Association of American Railroads on February 8 as follows:

	Surplus	Shortage
Plain Box	0	15,396
Auto Box	66	140
Total Box	66	15,536
Gondola	841	3,585
Hopper	7	3,383
Covered Hopper	0	7
Stock	861	0
Flat	245	703
Refrigerator	1,242	40
Other	306	0
	3,568	23,254

under construction in the vicinity of Legion place in Woodbridge.

"To take care of this construction, a new track was swung over about 50 ft. to the right of the old track as you face south. It was of standard construction built over solid fill, and west of the point at which the new track deviated from the old line there was a trestle across Legion place, which was not involved in the accident except insofar as it was damaged as a result of the wreck.

"Simultaneous with the opening of the new detour track at 1.01 p. m. today (Tuesday), a speed restriction of 25 m.p.h. was put into effect to take care of the swingover. The first train to go over this detour passed at about 1.50 p. m., and five other trains passed over it safely before No. 733 ("The Broker"). The cause of the accident is now under investigation."

Three Alco Plants Hit by Strike

Members of the United Steelworkers of America, C.I.O., went on strike for higher wages at three New York state plants of the American Locomotive Company on February 1. About 7,000 workers have been made idle at the firm's Schenectady, Dunkirk and Auburn plants as a result of the strike, which, company officials are reported to have said, will hamper the country's defense effort by cutting production of locomotives.

L.I.R.R. Commission Presents Legislation

Supplementing its preliminary report of January 20 — summarized in *Railway Age* of January 29, page 36 — New York state's special Long Island Rail Road Commission has presented to Governor Thomas E. Dewey proposed legislation to carry out its recommendations for acquisition and operation of the Long Island by a public authority; and has issued also a statement amplifying and explaining certain portions of its earlier report.

The proposed legislation — which is suggested for consideration in its present or revised form by the New York state legislature — closely follows the commission's original proposals. It would, in brief, create a three-man Long Island Transit Authority, with power to acquire and operate in the name of the state "railroad and related transportation facilities on Long Island and to and from Long Island." The authority would be empowered to issue bonds or notes up to a maximum of $100 million, and to fix intrastate passenger fares outside the jurisdiction of the state Public Service Commission. It would be exempt from future state or local taxes, and, subject to qualifying provisions, from certain past taxes and from assessments for past obligations for grade crossing eliminations. Seniority rights of employees of the railroad would be retained under the authority, as would employee rights under the Railroad Retirement Act and other applicable federal legislation.

The commission likewise has proposed amendments to the Federal Bankruptcy Act and to the Interstate Commerce Act. The former would be changed to eliminate "certain procedural requirements" in cases where "more than 90 per cent of the bonds and capital stock of the debtor are owned or controlled by a single corporation." The latter would be changed to provide that the Interstate Commerce Commission "shall not have jurisdiction over state-owned or operated railroads deriving more than 50 per cent of their operating revenue from transportation of passengers in intrastate commerce insofar as the following matters are concerned: abandonment of lines; extension of lines or increase of facilities; the making of leases of property; intrastate passenger fares; the issuance of securities; and block signal systems and other safety devices."

The commission's explanation of its first report consisted of answers to nine specific criticisms of its earlier findings. The commission:

1. Said it does not advocate a flat increase of any specific figure in commuter fares, but believes some increase will be necessary to enable the proposed authority to "have sufficient income to pay for improvements and retirement of debt and interest on debt." "There is no use," the commission said, "in shouting 'no increase.'"

2. Declared that exemption from local real estate taxes is essential for the same reason that a rise in commuter fares is inescapable—to attract necessary capital.

3. Dismissed as "wholly impractical" the suggestion that one of the three authority members be elected by commuters. Commuter groups, the commission felt, would have ample opportunity to present their views to the authority.

4. Said it could not make confident predictions that freight revenue could be materially increased, at least within the immediate future. Zoning changes to attract industry to eastern Long Island are matters for local government, the commission added.

5. Declared it does not necessarily recommend that the authority obtain $100 million of new capital, but believes it should be authorized to raise up to that amount.

6. Called "wholly impractical" the suggestion that the P.S.C. be allowed to retain its control over commuter rates.

7. Said it "did not and does not advocate . . . overpaying the Pennsylvania as owner of the Long Island." It stressed that it made "no estimate" as to the amount to be paid the P.R.R.

8. Expressed the opinion that "with patience and restraint" employee relationships with the authority can be worked out. Employees, the commission declared, "have more to gain from restoration of working morale on the Long Island than any others."

9. Dismissed as "manifestly indefensible" the suggestion that federal or state governments subsidize the railroad.

CANADIAN PACIFIC trains and ocean liners each use this new $2-million ocean-rail terminal, built by the Canadian government, at St. John, N. B. The two-story structure, 330 ft. by 130 ft. in size, contains all necessary facilities for train-steamer transfer, customs inspection and immigration. The vessel shown in the background is the C. P. S. S. "Empress of Canada"

I.C.C. Rejects Rate Plea of Truckers

The Interstate Commerce Commission has denied the petition whereby the Middle Atlantic Conference, an organization of motor carriers, sought to intervene in the Ex Parte 175 freight-rate case for the purpose of obtaining for its members increases in line with advances which might be approved for the railroads. As noted in *Railway Age* of February 5, page 54, the conference petition said that, if truck rates were not increased along with rail rates, the truckers would get more business than they could handle.

The commission's denial order said that a granting of the petition would "unduly" broaden the issues in the

railroad case. It also said that "the subject matter of this intervening petition can be more conveniently and appropriately handled upon the filing of a separate petition."

Meanwhile, the commission, in the same order, authorized intervention in Ex Parte 175 of additional water carriers, including the government-owned Inland Waterways Corporation. Hearings in the case are scheduled to open February 19 at Washington, D. C., before the commission's Division 2.

New Henderson Petition Is Set For I.C.C. Hearing

The Interstate Commerce Commission will hold hearings on a petition filed by Elmer W. Henderson in the case wherein he assailed dining car rules on the Southern. Complainant Henderson is now contending that the rules which the Southern established following a United States Supreme Court decision in the case still provide for a difference in treatment "solely because of race." The commission did not set a date for the new hearings. (See *Railway Age* of November 25, 1950, page 47.)

Next Hearing in Mail Pay Case Is Feb. 26

Further hearing in the pending mail pay case (No. 9200) will be held in Washington, D. C., on February 26 before Interstate Commerce Commissioner Mitchell and Examiner Frank E. Mullen. In announcing the new date, the I.C.C. noted that the hearing scheduled for February 6 was cancelled.

"Private" Truckers Called Harmful to All Transport

E. R. Jelsma, staff director for the Senate subcommittee on domestic land and water transportation, has expressed concern that the widespread operations of "private" truckers are harmful not only to for-hire carriers but to the entire transportation system.

Addressing the annual meeting of the National Council of Private Motor Truck Owners, which was held February 1-2 in Washington, D. C., Dr. Jelsma condemned so-called "private carriers" who transport their own merchandise to destinations which happen also to be origin points for exempt commodities, and who then carry a return load of exempt goods at unpublished rates.

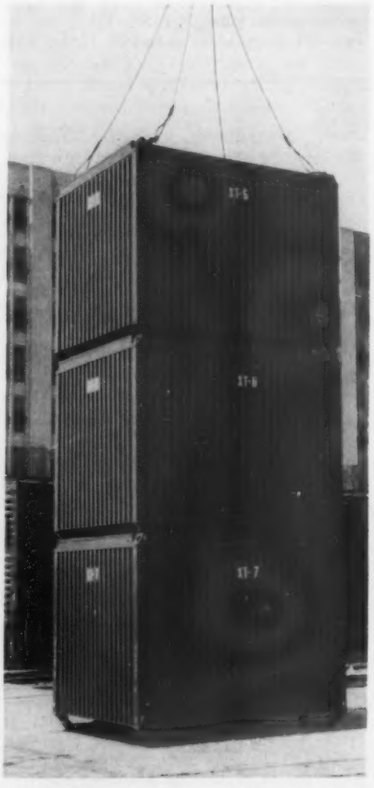
With the number of exempt commodities constantly increasing, the compensated return-load business stands to be greatly expanded, Dr. Jelsma said. He said these carriers often charge rates below those of for-hire carriers. The result has been a "marked increase" in the number of regulated carriers illegally competing for exempt business by cutting their rates in spite of Interstate Commerce Commission regulations to the contrary.

Dr. Jelsma said one reason these "abuses" have arisen is the "excessively wide area allowed under the law" to the private carriers. He said the definition of that type carrier in the Interstate Commerce Act is "so broad and so loose that only chaos prospers."

O.P.S. Puts Ceilings on Iron and Steel Scrap

On February 3, Director of Price Stabilization Michael DiSalle issued the text of the government's order freezing — after roll-backs — prices of iron and steel scrap. Forty-one basing points, scattered over the country, were established and base prices for No. 1 railroad heavy melting steel were set, ranging from a high of $46 per gross ton (delivered) at most points in the Pittsburgh-Youngstown area to a low of $37 at Pacific Coast points. Price roll-backs of from $2 to $7 were set in some areas.

Ceiling on-line prices, which are ". . . the ceiling prices that the originating railroad may charge for scrap delivered to a consumer located on the line of the railroad," also were set up. For a railroad operating in a basing point (the areas of which were specified in such districts as Pittsburgh, Chicago, San Francisco, etc.) "the ceiling on-line price of any grade of steel scrap originating from an operating railroad operating in a basing point named . . . shall be the price established in that section for the scrap at the highest priced basing point in which the railroad operates." For railroads which do not operate in a basing point, the ceiling on-line price will be the price established at the "most favorable basing point . . . minus the foreign line proportion of the lowest established charge for transporting the scrap by rail from the scrap accumulation point of the railroad to such basing points. (The 'scrap accumulation point' shall be the point from which the greatest tonnage of scrap was shipped in the calendar year 1950.) The ceiling on-line price of No. 1 railroad heavy melting steel need not fall below $34 per gross ton (with differentials established . . . for all other grades)." The most favorable basing point, the regulation states, is the basing point which will yield the highest ceiling on-line price.



DEVELOPED BY THE ARMY TRANSPORTATION CORPS for transporting post exchange supplies and household goods to and from Germany, Newfoundland and the Canal Zone, these experimental "shipside transporters" have been found to be both feasible and economical, according to an Army statement. Designed to cut multiple handling of individual items and to reduce damage to household goods shipped aboard vessels, each unit has 295 cu. ft. of usable space and weighs 1,320 lb. Twenty-two pilot models are now in service, following tests with preliminary types of plywood, corrugated and sheet aluminum, honeycomb aluminum, and corrugated and sheet steel units

Baxter Becomes D.T.A. Information Officer

Charles S. Baxter has been appointed information officer of the Defense Transport Administration. For the past two years, Mr. Baxter has served the Interstate Commerce Commission as assistant director of its Bureau of Traffic.

I.C.C. Revises Diesel Brake Rule

Rule 205(a) of the Interstate Commerce Commission's Rules and Instructions for Inspection and Testing of Locomotives Other Than Steam has been revised as proposed in the commission's notice of October 4, 1950. The rule relates to air-brake equipment, and the revised version, prescribed by the commission's Division 3, reads as follows:

"The main reservoir system of each unit shall be equipped with at least one safety valve, the capacity of which shall be sufficient to prevent an accumulation of pressure of more than 10 pounds per square inch above the maximum working air pressure fixed by the chief mechanical officer of the carrier operating the locomotive.

"Each unit that has a pneumatically actuated system of power controls shall be equipped with a separate reservoir of air under pressure to be used for operating such controls, other than brake controls, which reservoir shall be provided with means to automatically prevent loss of

pressure in event of failure of main reservoir air pressure, shall have storage capacity to permit not less than 3 complete operating cycles of control equipment and shall be so located that it will not be readily susceptible to damage. Each unit built before January 1, 1951, that has a pneumatically actuated control system of power control shall be so equipped the first time said unit receives repairs of a general nature but not later than January 1, 1952."

The change is the addition of the second paragraph. The first paragraph was the previous rule. The matter was handled by the commission in a proceeding docketed as Ex Parte No. 174, the revision having been recommended by Edward H. Davidson, director of the Bureau of Locomotive Inspection. Division 3's order prescribing the new rule was dated January 29. It noted that no objection to the change was filed pursuant to the notice of October 4, 1950. (See *Railway Age* of October 14, 1950, page 42.)

Truman Seeks $10 Billion Increase in Tax Revenue

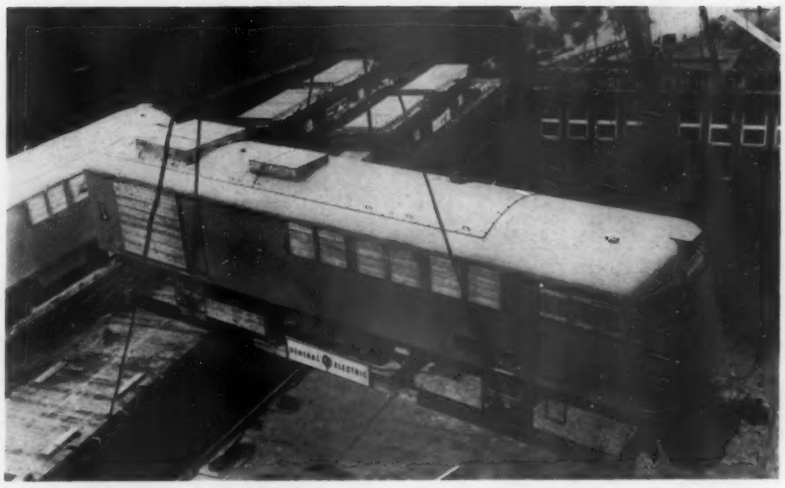
President Truman on February 2 sent to Congress a special tax message recommending enactment "as rapidly as possible" of legislation designed to increase tax revenues by $10 billion a year. On January 6, the House committee on ways and means got specific recommendations from Secretary of the Treasury Snyder.

The secretary suggested, among other proposals, that corporate income tax rates be increased by eight percentage points. That would raise the present 25 per cent rate on the first $25,000 of annual earnings to 33 per cent, while the 47 per cent rate on "normal" earnings above $25,000 would be supplanted by a 55 per cent rate. The rate on "excess profits" would be raised from 77 per cent to 85 per cent; and the ceiling rate, which fixes the proportion of net income that can be taken for taxes, would go up from 62 to 70 per cent.

While he recommended increases in various other excise taxes, Secretary Snyder did not propose to raise the levies on amounts paid for-hire carriers for transportation of persons and property. He did propose that the federal gasoline tax be increased from 1½ cents to 3 cents per gallon; and that the excise tax on manufacturers' prices of automobiles be raised from 7 per cent to 20 per cent.

The higher corporate income taxes proposed by Mr. Snyder would yield about $3 billion a year, according to his presentation. The proposed increases in excise taxes would yield a like amount, while there would be an annual yield of approximately $4 billion from increases in individual income taxes which he also proposed.

The President's tax message indicated that it would be followed by a later call for further increases designed to yield approximately $6 billion more. His over-all plan is to put the federal government on a "pay-as-we-go" basis. That would require additional tax revenues of about $16 billion a year, since the President's budget for fiscal 1952 proposes appropriations totaling $71.6 billion, while estimated tax receipts for that year, on the basis of present levies, total $55.1 billion.



FIRST OF EIGHT General Electric 100-ton diesel-electric locomotives shipped recently to the Belgian Congo is shown being loaded aboard the Belgian liner S.S. Stavelot. In the background on flat cars are the locomotive trucks. The locomotives, purchased by the Societe d'Electricite et de Mecanique, International General Electric Company distributor in Belgium, are 42-in. gage and rated at 1,400 hp. They are equipped with dynamic braking because they will be used on heavy grades of the Matadie-Leopoldville line along the Congo river

Appointment of Adams To C.A.B. Is Confirmed

The appointment of Joseph P. Adams of Seattle, Wash., to the Civil Aeronautics Board was confirmed by the Senate on February 5. Mr. Adams' term runs to December 31, 1956.

Wage Order Modified To Permit Some Raises

Modification of the Economic Stabilization Agency's recent wage freeze order was announced by that agency on February 2. This change eases the more rigid features of the original order, and permits merit and length-of-service pay increases, provided such increases are made in accordance with agreements in effect prior to January 26. (See *Railway Age* of February 5, page 62). Where no formal agreements were in effect, a company may grant increases in line with the company's 1950 records provided the over-all increases do not exceed the proportions of those made last year.

The new order also permits promotions under certain conditions, as well as the creation of new jobs at higher wages, provided such changes were an established practice of a company prior to the wage freeze. New employees, who are hired for jobs with a varied pay scale, must begin work at the minimum scale, the order said. But the order also provided that where a single pay rate applies, the employee is entitled to that rate.

Wyle to Handle Traffic for Paducah Atomic Plant

Bruce Wyle, former terminal manager for the Reading at Port Reading, N. J., has been appointed traffic and transportation manager for F. H. McGraw & Co. on the new $350-million atomic energy project which McGraw is building at Paducah, Ky. Mr. Wyle served with the Reading for 25 years before he resigned to join F. H. McGraw several years ago, as an advisor on railroad engineering and construction. He has since made special railroad surveys in China, Africa and Venezuela.

The Atomic Energy Commission project, said to involve the largest single contract ever awarded to a construction company, will produce U-235 when completed, and will be similar to present facilities at Oak Ridge, Tenn.

Freight Car Loadings

Loadings of revenue freight in the week ended February 3 totaled 651,124 cars, the Association of American Railroads announced on February 8. This was a decrease of 133,061 cars, or 17.0 per cent, compared with the previous week; an increase of 38,660 cars, or 6.3 per cent, compared with the corresponding week last year; and a decrease of 31,019 cars, or 4.5 per cent, compared with the equivalent 1949 week.

Loadings of revenue freight for the

week ended January 27 totaled 784,185 cars; the summary for that week, as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, January 27, 1951

District	1951	1950	1949
Eastern	144,274	116,640	131,267
Allegheny ...	162,420	128,016	150,987
Pocahontas ..	61,275	48,788	56,659
Southern	140,263	119,667	118,496
Northwestern.	83,545	64,819	69,026
Central Western	126,524	100,901	100,270
Southwestern.	65,884	57,103	52,597
Total Western Districts ...	275,953	222,823	221,893
Total All Roads	784,185	635,934	679,302
Commodities:			
Grain and grain products ..	53,939	40,327	39,409
Livestock	8,891	8,415	9,111
Coal	163,204	119,759	146,189
Coke	16,208	12,946	15,686
Forest products	50,278	35,095	32,689
Ore	18,141	12,544	12,396
Merchandise l.c.l.	81,613	80,599	90,747
Miscellaneous.	391,911	326,249	333,075
January 27 ..	784,185	635,934	679,302
January 20 ..	779,816	619,163	709,837
January 13 ..	783,025	629,543	733,865
January 6 ...	662,444	505,753	721,507
Cumulative total 4 weeks ..	3,009,470	2,390,393	2,844,511

In Canada.—Carloadings for the week ended January 27 totaled 76,257 cars, compared with 78,044 cars for the previous week, and 64,033 cars for the corresponding week last year, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
January 27, 1951..	76,257	36,818
January 28, 1950..	64,033	29,123
Cumulative totals for Canada:		
January 27, 1951..	295,534	138,713
January 28, 1950..	248,249	110,244

"GAEX-DF" Car Called "Natural" for War Freight

Ben Coleman, president of the General American-Evans Company, held a press conference in Washington, D. C., on January 30 to outline a proposal for lease to the railroads of GAEX-DF box cars "for special use of the military."

The proposal which Mr. Coleman outlined at his press conference was pointed up in full-page advertisements which appeared, also on January 30, in Washington newspapers. The advertisement asserted that the first 25 GAEX-DF cars in regular service had "proved far more than was promised of them." It went on to say cars earned up to $2,192 in monthly revenue, which was "more than 15 times the rental cost for the leasing railroad."

"This is the most modern, quickest, safest way to ship fragile war materials," the advertisement also said. "GAEX-DF cars can go to war without any investment on the part of the railroads or the government. General American-Evans is prepared to supply any quantity of cars which can be leased directly to the railroads at a rental rate which represents, on the record of experience, a small percentage of the car's earning power. Shippers or government departments can request any railroad to furnish the cars. . . ."

Responding to questions at the conference, Mr. Coleman said G.A.-E. hopes to build up a demand for the cars on the part of shippers, including military agencies, and thus stimulate railroad interest in its leasing plan. Under that plan, the leasing road pays approximately $125 a month, and the car is furnished to the shipper at regular tariff rates.

Mr. Coleman said the car permits railroads to offer services which meet truck competition. Among other advantages to the carriers, he listed heavier loading, reduced loss and damage claims, high daily mileage, and G.A.-E. "policing" service which undertakes to see that the cars are kept moving with high-revenue loads.

When a GAEX-DF car gets off the lines of the leasing road, the using road pays rent on a mileage basis. G.A.-E. collects these mileage charges and the amounts collected are offset against the monthly rental due from the leasing road. If such collections should exceed the monthly rental, the balance would accrue to the leasing road.

As to that situation, however, Mr. Coleman complained that the Association of American Railroads has not yet granted an "adequate" mileage rate. He explained that the cars now take the mileage rate for box cars, which is 6 mills. Mr. Coleman said that has not been changed since 1901, and noted that privately-owned tank cars take mileage rates of 1½ to 2 cents, while the rate on refrigerator cars is 3 cents. He insisted that the GAEX-DF car is just as special as a tank or reefer. He said it "can justify" a mileage rate of 5½ cents, but the A.A.R. has been advised that the lessee roads "would be happy with a 3-cent rate."

It is understood that the matter of fixing a new rental charge for this car, when it is on lines of roads other than the lessee, is under active consideration at the A.A.R. The proposal being processed is that the mileage idea be abandoned and the cars made subject to the regular per diem rate of $1.75. That proposal is based on a theory which concedes that the cars are of a special type, but nevertheless holds that they are comparable to various special-type cars (such as auto-device cars) owned by the railroads, on which the per diem rate applies.

Final determination of the matter would be made by a vote of roads subscribing to the per diem agreement. Such votes are on the basis of car ownership. Thus far, 14 roads have leased a total of 360 of the GAEX-DF cars, Mr. Coleman said.

November Truck Traffic

Motor carriers reporting to the American Trucking Associations transported in November 4,039,433 tons of freight, a decrease of 9.4 per cent below the previous month's total of 4,458,319, but an increase of 23.3 per cent above the 3,277,084 tons transported in November, 1949. The figures, according to the A.T.A., are based on comparable reports from 298 truckers in 42 states.

House Group Sets Hearing On St. Lawrence Seaway

The House committee on public works will open hearings February 20 on pending resolutions to approve the United States-Canada agreement for construction of the St. Lawrence seaway and power project. The committee's announcement said the hearings were expected to extend over about 10 days.

New Auto Rates Delayed by I.C.C.

The Interstate Commerce Commission has postponed, from February 20 until April 21, the effective date of its outstanding order requiring an adjustment of railroad freight rates

First Railroad Ad Contest For Suppliers

The "First Annual Advertising Competition," to be sponsored by the Association of Railroad Advertising Managers, has been announced by the association in connection with its annual meeting at St. Augustine, Fla., on January 22 and 23.

The competition is designed to encourage railway supply advertisers to "augment the individual and collective efforts of railroad advertisers in creating a better understanding on the part of the public, of the importance of railroads in the transportation scheme of America, and in encouraging the development of additional rail traffic." Any campaign run in newspapers or magazines, or both, will be eligible. Entries of an institutional nature are to be considered separately from those which are of direct assistance in promotion of rail traffic. Ad proofs for the period from November 1, 1950, through October 31, 1951, are to be considered for the initial competition, awards for which will be presented early in 1952. C. D. Perrin, assistant secretary of the association, at 85 West Harrison street, Chicago 5, has been designated to receive all entries.

Elections held at the St. Augustine meeting resulted in election of A. W. Eckstein, advertising agent of the Illinois Central, Chicago, as president. Other officers elected for the new year include F. Q. Tredway, Southern Pacific, San Francisco, Cal., first vice-president; C. C. Dilley, Chicago, Milwaukee, St. Paul & Pacific, Chicago, and L. A. Brown, Wabash, St. Louis, Mo., vice-presidents; R. P. Schaffer, Chicago & North Western, Chicago, treasurer, and C. J. Hoy, Pennsylvania, Chicago, secretary.

"Tailor-made"

Esso Andok B

a better lubricant for better protection

THE IDEAL LUBRICANT—for all traction motor armature bearings... it has successfully performed in many anti-friction bearings in auxiliary equipment on passenger cars and locomotives.

ANDOK B GIVES 3-WAY SERVICE *when properly used* for important traction motor armature bearings:

1. Avoids overgreasing.
2. Avoids undergreasing.
3. Helps prevent introduction of dirt into bearings.

Bearings lubricated with famous Andok B can be completely sealed after overhaul... should run under ordinary use for 300,000 miles without further attention. For high-quality, long-lasting lubrication protection that saves on maintenance costs... specify Andok B!

BACKED BY CONSTANT RESEARCH—continuing tests *in the lab* and *on the road* make certain that Andok B keeps pace with progress and latest railroad lubrication needs.

BACKED BY CONSTANT FOLLOW-UP—on-the-job check-ups by Esso Sales Engineers watch the dependable performance of Esso Railroad fuel and lubricants. Be sure to call on Esso for any railroad fuel or lubricating problems.

The Sign of QUALITY — ESSO — The Symbol of SERVICE

RAILROAD PRODUCTS

SOLD IN: Maine, N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Penna., Del., Md., D. C., Va., W. Va., N. C., S. C., Tenn., Ark., La.

ESSO STANDARD OIL COMPANY — Boston, Mass. — New York, N. Y. — Elizabeth, N. J. — Philadelphia, Pa. — Baltimore, Md. — Richmond, Va. — Charleston, W. Va. — Charlotte, N. C. — Columbia, S. C. — Memphis, Tenn. — New Orleans, La.

on new automobiles. Railroads in the various territories sought the postponement, and have filed petitions for reconsideration of the commission decision involved.

That decision, reviewed in *Railway Age* of November 25, 1950, page 52, would have the effect of narrowing the spread between the rate basis applicable on shipments from factories in Detroit, Mich., South Bend, Ind., Toledo, Ohio, and Kenosha, Wis., and that applicable on shipments from the regional assembly plants of General Motors Corporation and the Ford Motor Car Company. The case is docketed as No. 29820.

ORGANIZATIONS

In connection with the centennial of **Northwestern University,** Evanston, Ill., and Chicago, D. W. Yungmeyer, vice-president of the **Railway & Locomotive Historical Society,** will give a special talk on February 21 on the role John Evans played in the location and building of railroads in the Chicago area. It was for John Evans, an early civic leader, that the town of Evanston was named. Mr. Yungmeyer's talk will be presented in Lecture Hall 6 of the Technological Institute (Evanston campus) following a special dinner to be held at 6 p.m. at nearby Sargent Hall. The talk will be open to the public.

The **Women's Traffic Club of New York** will hold its regular monthly dinner meeting at the Park Sheraton Hotel on February 13. Lillian M. Griffin, investment advisor of Shearson Hammill & Co., will speak on "Investments."

The eleventh annual **Congress on Industrial Health** will be held in Atlanta, Ga., February 26-28. The meeting will be sponsored by the Council on Industrial Health of the American Medical Association, the Medical Association of Georgia and the Fulton County (Georgia) Medical Society.

J. W. Teker, consulting engineer, motor engineering division, of the General Electric Company, Erie, Pa., will be guest speaker at the next meeting of the **St. Louis Railroad Diesel Club,** to be held on February 13, at the Hotel York, St. Louis, Mo. The subject of his talk will be "Maintenance of Alco-GE Rotating Apparatus on Diesel Locomotives and Changes in New Alco-GE Locomotives." At the January 9 meeting of the club, the following officers were elected for the new year: President, H. E. Jamison, electrical foreman, Missouri Pacific; vice-presidents, H. G. Field, assistant general foreman, Terminal Association St. Louis, G. W. Broughton, general mechanical inspector, Gulf, Mobile & Ohio, and V. D. Greene, general foreman, Southern; sergeant-at-arms, Harry J. Steeb, railroad representative, Oakite Products, Inc., and secretary-treasurer, Fred C. Whitlock, chief clerk to superintendent motive power and equipment, T.R.R.A.

SUPPLY TRADE

Clarence B. Flint, vice-president and a director of the **National Aluminate Corporation,** with headquarters at Chicago, has retired, but will continue with the company in a semi-active capacity, serving as a consultant

Clarence B. Flint

for the railroad department. Mr. Flint was formerly a vice-president and director of the Paige-Jones Chemical Company, water treatment manufacturers, and became associated with Nalco in 1930, when Paige-Jones was acquired by National Aluminate.

Gilbert F. Close, director of public relations of the General Steel Castings Corporation, who has retired. Mr. Close, who was at one time secretary to President Woodrow Wilson, joined the company in 1920 and was appointed director of public relations in 1948

Chester F. Delbridge has been appointed general sales manager of the **K-G Equipment Company,** formerly the K-G Welding & Cutting Co. He will maintain headquarters at 50 Broadway, New York 4, the executive

Chester F. Delbridge

sales office of the company. Mr. Delbridge was associated with the Air Reduction Sales Company for 20 years, and joined K-G, a unit of Air Products, Inc., six months ago.

Clem W. Gottschalk, general traffic manager of the **Jones & Laughlin Steel Corporation,** has been appointed assistant vice-president—traf-

Clem W. Gottschalk

fic. Mr. Gottschalk joined Jones & Laughlin over 30 years ago as a rate clerk and advanced through various positions until his appointment in 1941 as general traffic manager.

Joseph W. S. Davis has been appointed assistant to **W. A. Callison,** vice-president, eastern regional sales, of the **American Locomotive Company.** With headquarters at the company's New York office, Mr. Davis has been assigned responsibility for sales of the Railway Steel-Spring Division in the entire eastern seaboard area. Mr. Davis has been associated with the Railway Steel-Spring Division of Amer-

(Continued on page 135)

CONGRATULATIONS, ILLINOIS CENTRAL

on rounding the bend into your 2nd Hundred Years!

We wish those three fellows perched on old No. 1, your original locomotive, back there in 1851, could be around today to see the changes in the Illinois Central.

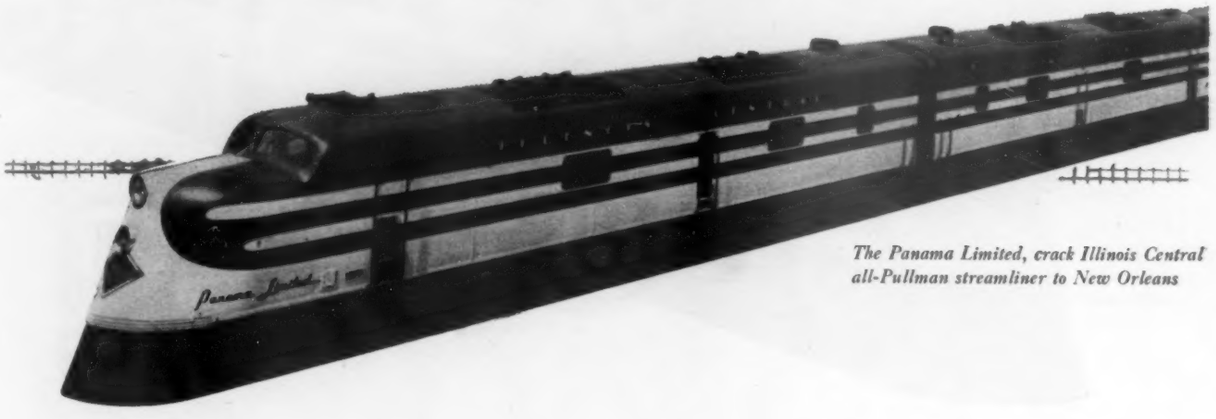
Yes, and the changes in the whole United States, too, for much of the progress—mining, industrial, farming—made in that period is directly traceable to the opening and development of the West by the railroads. We wish they could know a little about the millions of people and thousands of businesses you serve, from Chicago to the Gulf, and something about the industries that serve you.

American Brake Shoe started doing business with the railroads in 1902. Since that time we have grown and progressed, too. We have added many products and continuously improved them all to keep pace with the tremendous growth and improvement of rail transportation in the United States.

On the next two pages are shown some of the railroad products we manufacture and sell.

AMERICAN BRAKE SHOE COMPANY

NATIONAL BEARING DIVISION BRAKE SHOE & CASTINGS DIVISION · SOUTHERN WHEEL DIVISION



The Panama Limited, crack Illinois Central all-Pullman streamliner to New Orleans

THE ILLINOIS CENTRAL

ENJOYS IMPROVED PERFORMANCE

from these

BRAKE SHOE

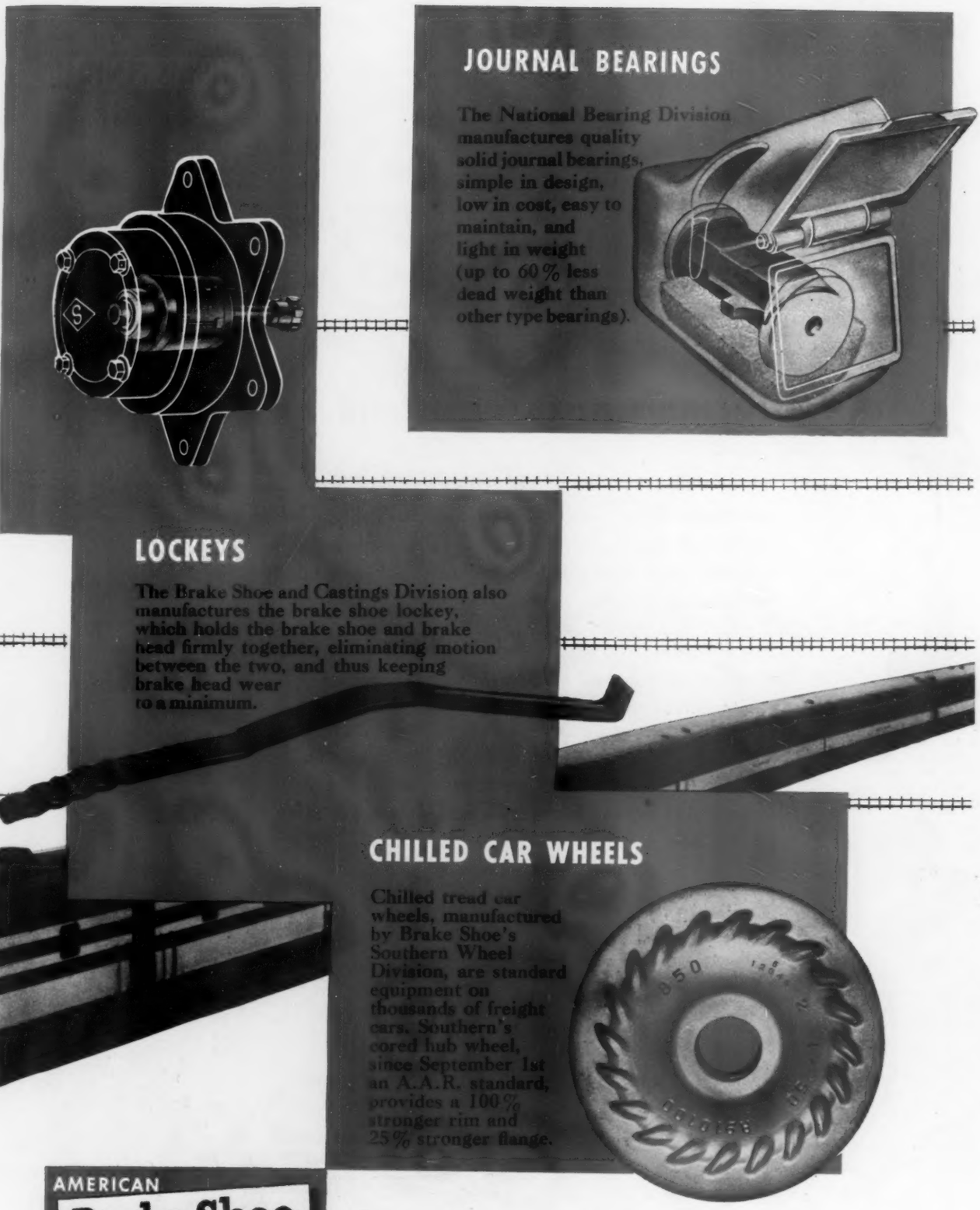
PRODUCTS

CONTROLLERS

The Brake Shoe and Castings Division supplies the nation's railroads with the electrically-operated Brake Shoe Controller, which protects diesel and passenger equipment against spinning, locking and sliding wheels.

BRAKE SHOES

The right brake shoe for each type of railroad service is furnished by the Brake Shoe and Castings Division. *Diamond "S"* for freight and passenger service; *Carbon insert shoe* for high-speed passenger and diesel equipment.



ILLINOIS CENTRAL

CONGRATULATIONS

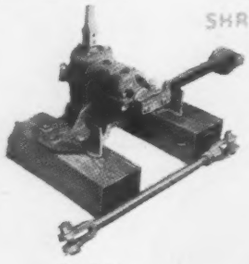
TO THE MAIN LINE OF MID-AMERICA

Ramapo Ajax Division of the American Brake Shoe Company salutes the Illinois Central Railroad on its first one hundred years of progress which has so greatly contributed to the remarkable development of industry and home life throughout the Mississippi Valley.

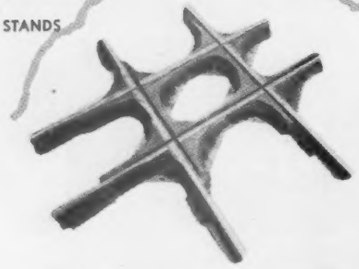
We are proud to have shared in and kept pace with this progress, growth and modernization by providing track equipment of outstanding merit.

Through the combined facilities of the American Brake Shoe Company it is our aim to continuously combat the forces of wear and impact in order to provide greater safety under present day speeds and car loadings.

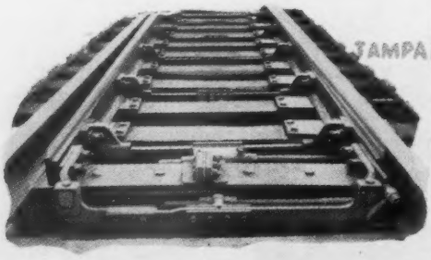
STYLE 112-D
RACOR SWITCH STANDS
For Main Line Use



STYLE 22
RACOR AUTOMATIC SWITCH STANDS
For Yard Use



RACOR MANGANESE STEEL CROSSINGS



RACOR VERTICAL SWITCH RODS

Brake Shoe

RAMAPO AJAX DIVISION
109 North Wabash Avenue, Chicago 2, Ill.

RACOR

(Continued from page 130)
ican Locomotive since 1930, and since 1945 has been assistant district sales manager in the New York district, which recently was incorporated into the eastern regional sales organization.

Radio Engineering Products, Ltd., an independent manufacturing and engineering organization in Canada, with sales headquarters at 4305 Iberville street, Montreal, Que., and manufacturing facilities at Granby, Que., has been appointed Canadian distributor for the Bendix Radio Division of **Bendix Aviation Corporation,** Baltimore, Md. The Canadian firm is headed by **Charles B. Fisher,** president; **Sydney T. Fisher,** vice-president, **Fred S. Fisher,** chief engineer, and **Ted Meek,** sales manager. **Ernest J. Jungbluth** will handle railroad radio sales.

Wallace B. Phillips has been elected president of the **Pyrene Manufacturing Company,** Newark, N. J., succeeding **Edward J. Waring,** who retired in August 1950, after serving the company for almost 40 years as treasurer, vice-president and president. Mr. Phillips joined Pyrene in 1913 and in January of that year was one of three associates who formed an

Wallace B. Phillips

agency to sell Pyrene fire extinguishers in Europe, Africa and the Far East. In February 1914 this agency was absorbed into the Pyrene Company, Ltd., of England, then established, of which Mr. Phillips has since been chairman and managing director. In 1916 he incorporated Ets Phillips & Pain in Paris, which was followed a year or two later by Belgian and Spanish companies having similar titles.

Walter H. Knapp, Inc., Milwaukee, Wis., have appointed **William R. Powrie,** civil engineer, as managing engineer of a newly established office at 2225 Rand tower, Minneapolis, Minn.

Everett S. Lee has been appointed editor of the "General Electric Review" — a monthly engineering magazine published by the **General Electric Company** — succeeding **Edward C. Sanders,** who has retired. Mr. Lee formerly was executive engineer of the company's general engineering laboratory at Schenectady, N. Y., and is a past president of the American Institute of Electrical Engineers.

Edward J. Heimer, formerly a vice-president of Clapp & Poliak, Inc., has been appointed sales manager of hand lift and motorized hand trucks made by the Philadelphia, Pa., division of **Yale & Towne Manufacturing Co.** Mr. Heimer will succeed **W. Glen Tipton,** who, after 23 years of service, will retire on March 1.

S. C. Palmer has been appointed assistant manager of the transportation department of the **Westinghouse Electric Corporation,** at East Pittsburgh, Pa. Mr. Palmer joined Westinghouse in 1931 and since March 1936 has been manager of the marine and transportation division in the New England district.

Ernest E. Allison has been appointed director of traffic of the **Anchor Hocking Glass Corporation,** to succeed the late **I. L. Dunnington,** formerly general traffic manager. Mr. Allison has been associated with the Pennsylvania for the past 26 years, holding various positions in the freight traffic department at Pittsburgh, Pa., Youngstown, Ohio, and Rochester, N. Y. He was district freight agent at Rochester at the time of his recent appointment.

Stephen Sarnecke has been transferred from the Chicago headquarters of the **Vapor Heating Corporation** to Atlanta, Ga., to work with railroads in Georgia, Tennessee, Alabama and

Stephen Sarnecke

the Carolinas. Mr. Sarnecke has been with Vapor for several years in development engineering and has worked with railroads all over the country on train heating problems.

OBITUARY

Walter Geist, 56, president of the Allis-Chalmers Manufacturing Company, Milwaukee, Wis., died on January 28. Mr. Geist joined Allis-Chalmers in 1909 and worked in the milling department as tracer, draftsman and engineer, successively, before his appointment as assistant manager in 1928. He

Walter Geist

later was transferred to the company's sales organization, and in 1933 was appointed general sales representative for the general machinery division. In 1939 he was elected a vice-president in the division and in 1942 was selected as executive vice-president. He was elected president of the entire company in May 1942.

CAR SERVICE

I.C.C. Service Order No. 873, effective from February 3 until July 31 unless otherwise modified, makes Richard H. Lamberton the commission's agent with powers to regulate the "use, control, supply, movement, distribution, exchange, interchange, and return" of tank cars. An accompanying notice from I.C.C. Secretary W. P. Bartel pointed out that the order does not make the use of tank cars subject to a system of individual permits; but users of tank cars "are placed on notice that, when conditions require, the commission's agent is empowered to requisition and allocate tank cars to vital movements requiring this type of equipment."

Commission Agent Lamberton is also consultant to Defense Transport Administrator James K. Knudson on matters relating to transportation of liquid and gaseous commodities in tank cars. Issuance of the I.C.C. order "highlighted" the tight tank-car situation, said a D.T.A. statement of February 5. The statement went on to quote Mr. Lamberton as having said that "an already critical situation has become multiplied several times in intensity by the near paralysis in rail movements brought on by the work-stoppage of railroad switchmen."

I.C.C. Service Order No. 865, which

imposes so-called super-demurrage charges running up to $20 per day, has been modified by Amendment No. 5. The amendment, effective January 26, suspended until March 16 the application of the order to cars of A.A.R. mechanical designations "HM", "HMA", and "HK", when such cars are used in transporting iron ore from origins in the states of Wisconsin, Michigan, and Minnesota.

I.C.C. Service Order No. 858, which places restrictions on the reconsigning of lumber, has been modified by Amendments No. 2 and No. 3. The former set back the order's expiration date from February 2 until May 15, while the latter, effective February 5, suspended the order until February 20.

The I.C.C. has extended several service orders which had been scheduled to expire in the latter part of January or the first part of this month. The orders, extending amendments, and new expiration dates are as follows:

No. 851, which authorizes railroads serving Nevada, Oregon, California and Arizona to furnish not more than three S.F.R.D. or P.F.E. refrigerator cars (not suitable for transporting commodities requiring protective service) in lieu of one box car ordered for shipments between points in those states. Amendment No. 4—May 31.

No. 856, which provides that Saturdays and Sundays occurring after expiration of free time shall be included in computing demurrage charges on freight cars. Amendment No. 2—May 1.

No. 859, which prohibits acceptance of any type car that is loaded with lumber or lumber products in Oregon or Washington and tendered for forwarding to another point to be stopped off to complete loading, unless the shipper certifies that the freight loaded in the car at the first loading point equals or exceeds 25 per cent of the marked or normal capacity of the car. Amendment No. 2—May 1.

EQUIPMENT AND SUPPLIES

FREIGHT CARS

The **Ford Motor Company** has ordered 119 70-ton gondola cars from the Magor Car Corporation.

The **Norfolk Southern** has ordered 150 50-ton gondola cars from the Magor Car Corporation.

The **Chesapeake & Ohio** has ordered 4,900 freight cars which are scheduled for delivery in 1952. The order consists of 2,500 70-ton hopper cars to be built by the American Car & Foundry Co., at Huntington, W. Va.; 1,000 50-ton 40½-ft. box cars and 200 70-ton covered hopper cars to be built by the Pullman-Standard Car Manufacturing Co. at its Michigan City, Ind., and Butler, Pa., plants, respectively; 750 50-ton 50½-ft. box cars and

200 70-ton, low-side, drop-end gondola cars to be built by the General American transportation Corporation, East Chicago, Ind., and 250 70-ton, 53½-ft. flat cars to be built by the Greenville Steel Car Company, Greenville, Pa. The C. & O. already has on order 6,000 freight cars, to be delivered this year, and two 410-ft. car ferries which are scheduled for delivery this year and next.

LOCOMOTIVES

The **Akron, Canton & Youngstown** has ordered three 1,600-hp. diesel-electric road-switching locomotives from Fairbanks, Morse & Co.

The **New Orleans Public Belt** has ordered two model S-8 800-hp. diesel-electric switching units from the Baldwin-Lima-Hamilton Corporation. Acquisition of these units will result in the road's complete dieselization.

The **New York, New Haven & Hartford** has ordered 10 single unit 2,400-hp. diesel-electric passenger locomotives from Fairbanks, Morse & Co., at a cost of approximately $2,225,000. Delivery will begin shortly and is expected to be completed this year.

SIGNALING

The **Chesapeake & Ohio** has ordered from the Union Switch & Signal Co. material to modernize "R" Cabin interlocking at Fulton, Va. In addition to a style C control machine, the order includes style R color-light signals, A-5 electro-pneumatic switch machines, M-22 electric switch machines, relays, rectifiers, housings and switch circuit controllers. Construction will be done by railroad forces.

The **Erie** has ordered from the Union Switch & Signal Co. material to install centralized traffic control between Portage, N. Y., and East Buffalo, approximately 60 miles, to permit conversion from double track to single track between those points. The 10-ft. style C control machine will be installed at Buffalo, N. Y. In addition to code equipment, the order includes style SL-21A electric locks, relays, transformers and switch circuit controllers. Field installation will be handled by railroad forces.

The **Missouri Pacific** has ordered equipment from the General Railway Signal Company for installation of type K, class M traffic control systems between Poplar Bluff, Mo., and Dexter, and between Bismark, Mo., and Cliff Cave. The present control machine at Poplar Bluff will be enlarged by addition of two panels equipped with 64 track lights and 50 working levers for control of 24 switch machines and 98 signals. Included in this order are types G and L color-light signals, model 5D switch machines, models 9A and 10 electric switch locks, and type K relays.

The **Union Pacific** has ordered from the Union Switch & Signal Co. material to install centralized traffic control on 5 mi. of single track between Topeka, Kan., and Menoken. In addition to the style C control machine, which will be located at West Topeka, Kan., the order includes styles H-2 searchlight and P-5 color-light signals, M-22A switch machines, relays, rectifiers, transformers, etc. Construction will be done by railroad forces.

The **Western Pacific** has ordered from the Union Switch & Signal Co. material to install coded remote signaling on approximately 214 mi. of single track between Alazon, Nev., and Salt Lake City, Utah. The style C control machine will be installed at Elko, Nev. In addition to code equipment, the order includes style H-2 searchlight signals, relays, rectifiers, transformers and housings. Field installation will be handled by railroad forces.

CONSTRUCTION

Baltimore & Ohio.—This road will complete its new $5,000,000 ore pier at Baltimore, Md., early in April and shortly afterward foreign ore shipments will begin arriving at the facility (see *Railway Age* of January 14, 1950, page 47; February 18, 1950, page 72; and March 4, 1950, page 47). The new B. & O. facility, designed to handle the flow of imported iron ores which soon will supplement the nation's dwindling internal ore supply, is located next to the road's export coal pier at Curtis Bay. B. & O. yards at that point are being expanded to handle additional movements which will be required by heavy ore tonnage.

Chicago & North Western-Lake Superior & Ishpeming-Duluth, South Shore & Atlantic.—These roads have applied to the I.C.C. for authority to construct approximately 6.4 miles of line, and to abandon about 4.6 miles of existing line, in the vicinity of Negaunee, Mich. In their application the roads said the new trackage will permit the development of iron ore deposits in the area. Much of the proposed line would be jointly constructed and operated, with the total construction cost estimated at $1,571,926. The C.&N.W. and the L.S.&I. would be reimbursed to the extent of one-half their share of the cost by Jones & Laughlin Ore Company. The latter would pay all the cost incurred by the D.S.S.&A., up to $474,985. Upon completion of the construction, the roads would divide the ore traffic upon the basis of the proportionate share of the construction cost paid by each road, i.e., 44.07 per cent to the C.&N.W., 30.22 per cent to the D.S.S.&A., and 25.71 per cent to the L.S.&I.

Long Island.—This road has awarded a contract to the Auserehl & Son Contracting Corp., Jamaica, N.Y., for a transformer yard and substation building at Island Park, N. Y., at an estimated cost of $42,000. The following projects, at the indicated probable costs, have been authorized: Replacing rotary converter substation with supervisory controlled mercury arc rectifier substation at Island Park ($280,000); replacing manual crossing gates and flashing lights with automatic short arm crossing gates at three crossings at Lindenhurst, N.Y. ($100,000); and reconstructing center pivot pier and west abutment of Wreck Lead drawbridge over Reynolds channel, Long Beach, N.Y. ($65,000).

FINANCIAL

Nickel Plate to Pay Preferred Arrears

Directors of the New York, Chicago & St. Louis have voted to wipe out all dividend arrearages on the company's 6 per cent cumulative preferred stock by paying in full remaining dividend accruals of $45 a share, on March 5 to stockholders of record February 16. L. L. White, president, said this dividend payment would approximate $16,226,000 on 360,567 shares of preferred stock outstanding.

Directors also have set March 29 as the date for a special meeting of stockholders, at which will be submitted a plan to split common stock by issuance of five shares for each share held, and to accord both preferred and common stock voting rights on a share-for-share basis. Notices of the meeting, to be held in Cleveland, and proxy statements setting forth the proposal in full detail, fill be sent to stockholders immediately after the February 19 record date.

Dividend arrearages on the preferred stock started accruing in 1931, and as late as December 1945 amounted to $87 a share, or an aggregate of $31,370,000. Dividends totaling $4 a share were paid in 1946 and $9.50 a share in 1947. On May 6, 1948, directors adopted a policy of declaring and paying, when earnings and financial conditions permitted, dividends equal to not less than 20 per cent of the company's net income for the preceding calendar year, after payment of all charges, including sinking fund appropriations and regular dividends of $6 a share per year. Under this policy, a total of $9 a share was paid on preferred stock in 1948; $13.50 a share in 1949; $34.50 a share in 1950, and $1.50 a share on January 2, 1951, reducing unpaid accruals as of that date to $45 a share.

While reducing arrearages on preferred stock, the Nickel Plate carried on an extensive modernization and improvement program which, since 1943,

has involved expenditure of approximately $70 million, including the cost of 1950 improvements on the Wheeling & Lake Erie, which was leased by the Nickel Plate on December 1, 1949, and now is operated as the Wheeling district. Almost all of Nickel Plate's net earnings from 1931 to 1945 were used for additions and betterments and debt reduction, and the road therefore was unable to pay dividends on its preferred stock in that period. To reimburse its treasury for a portion of these expenditures, the road, on January 11, offered 33,770 shares of common stock to its common stockholders at the rate of one share for each 10 shares held, at $150 a share. (See *Railway Age* of January 15, page 254.) This offering was highly oversubscribed.

Nickel Plate net income for last year was $21,019,542, compared with net income of $15,642,383 for 1949; both figures include the Wheeling District.

The directors also declared the regular quarterly preferred dividend of $1.50 a share payable on April 2 to holders of record March 9.

Great Northern.—*Acquisition.*— The Union Pacific has been authorized to intervene in connection with this road's pending application for authority to acquire control of the Pacific Coast Railroad. (See *Railway Age* of November 18, 1950, page 80.) In asking the I.C.C. for authority to intervene, the U.P. said it does not oppose the acquisition, but asks that conditions be imposed which will insure maintenance of present operating and tariff relationships between the P.C. and other carriers.

Missouri-Kansas-Texas. — *Adjustment Bonds.* — Directors of this road have authorized an interim payment of one coupon on its adjustment mortgage bonds. The coupon will become due and payable on March 1, and is No. 49, dated April 1, 1947, according to R. J. Morfa, Katy chairman.

Southern.—*Common Dividend.*— This road has declared a dividend of $1 a share on its common stock, payable March 15 to stockholders of record February 15. Four quarterly payments of 75 cents a share each were paid on this issue last year.

New Securities

Division 4 of the I.C.C. has **authorized:**

MISSOURI PACIFIC.—To assume liability for $7,080,000 of series PP equipment trust certificates to finance in part 38 diesel-electric locomotives costing approximately $8,855,289. (See Railway Age of January 8, page 66.) The certificates will be dated February 1, and will mature in 15 annual installments of $472,000 each, beginning February 1, 1952. Division 4's report approved a selling price of 99.4086 with interest at 2⅝ per cent—the bid of Salomon Brothers & Hutzler and three associates—which will make the average annual cost of the proceeds approximately 2.73 per cent. The certificates were reoffered to the public at prices yielding from 1.85 to 2.75 per cent, according to maturity.

SEABOARD AIR LINE.—To assume liability for $4,920,000 of series I equipment trust certificates to finance in part 1,225 new freight cars costing an estimated $6,587,646. (See Railway Age of January 15, page 255.) The certificates will be dated February 1, and will mature in 15 annual installments of $328,000 each, beginning February 1, 1951. Division 4 approved a selling price of 99.3766 with interest at 2½ per cent—the bid of Salomon Brothers & Hutzler and three associates—which will make the average annual cost of the proceeds approximately 2.61 per cent. The certificates were reoffered to the public at prices yielding from 1.8 to 2.65 per cent, according to maturity.

Security Price Averages

	Feb. 6	Last Week	Last Year
Average price of 20 representative railway stocks	60.79	58.94	44.62
Average price of 20 representative railway bonds	100.18	100.11	91.87

Dividends Declared

Alabama & Vicksburg.—3%, semiannual, payable April 2 to holders of record March 8.

Delaware & Hudson.—$1, quarterly, payable March 28 to holders of record March 12.

Erie & Kalamazoo.—$1.50, payable February 15 to holders of record January 31.

Green Bay & Western.—common, $5; income debentures A, $50; income debentures B (resumed), $10, all payable February 23 to holders of record February 9.

New York, Chicago & St. Louis.—6% preferred, $45 (to clear all arrears), payable March 5 to holders of record February 16; 6% preferred, $1.50, quarterly, payable April 2 to holders of record March 9.

Southern.—common (increased), $1, payable March 15 to holders of record February 15; 5% non-cumulative preferred, $1.25, quarterly, payable March 15, June 15 and September 14 to holders of record February 15, May 15 and August 15.

Vicksburg, Shreveport & Pacific.—common, 2½%, semiannual; preferred, 2½%, semiannual; both payable April 2 to holders of record March 8.

RAILWAY OFFICERS

EXECUTIVE

As previously announced, **Hamlin Brown** has been appointed vice-president of the SOUTHERN and the CINCINNATI, NEW ORLEANS & TEXAS PACIFIC (part of the SOUTHERN SYSTEM), with headquarters at Cincinnati, Ohio. Mr. Brown was born at Petersburg, Va., on August 3, 1903, and was graduated from the University of Memphis Law School in 1929. He entered the service of the Southern as a clerk-stenographer in September, 1918, at Norfolk, Va., serving later as rate clerk and traffic inspector at that point. In 1925 he became chief clerk to the assistant freight traffic manager at Memphis, Tenn., being appointed freight

Hamlin Brown

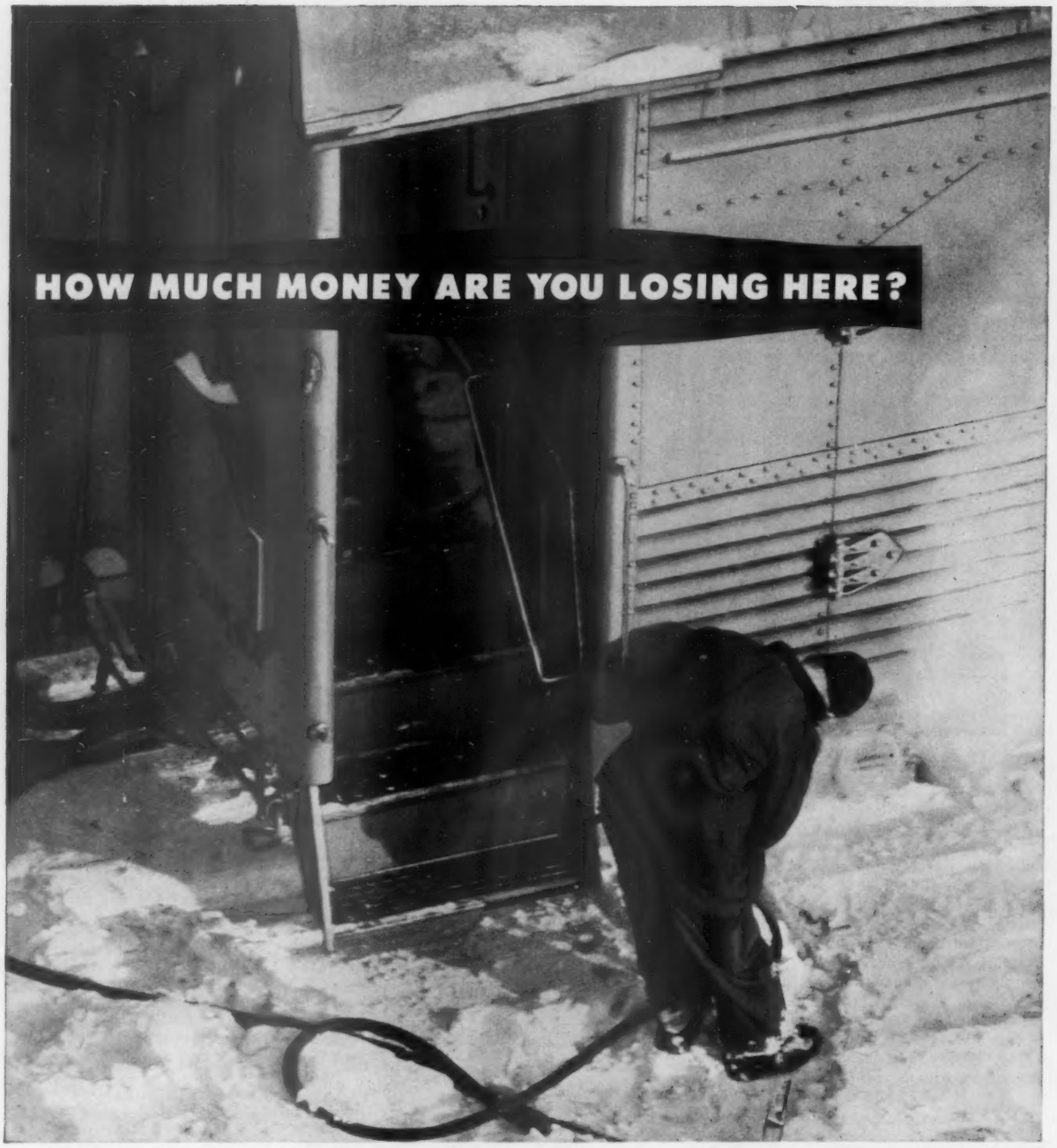
traffic representative at Greenville, S. C., in 1931. Later he served in the same capacity at Birmingham, Ala. In 1932 he was appointed commercial agent at Charlotte, N. C., and in 1934, division freight agent at Winston-Salem, N. C. Mr. Brown was advanced to assistant general freight agent at Atlanta, Ga., in 1936, and to assistant freight traffic manager in 1938. He became vice-president of the Georgia Southern & Florida (part of the Southern System) at Macon, Ga., in February, 1940, the post he held prior to his recent appointment.

F. J. Rose has been appointed assistant to vice-president and general manager of the MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE, with headquarters at Minneapolis, Minn.

FINANCIAL, LEGAL & ACCOUNTING

O. D. Weaver, secretary and treasurer of the FORT WORTH & DENVER CITY and the WICHITA VALLEY, at Fort Worth, Tex., has retired after more than 47 years of service. Succeeding Mr. Weaver is **W. L. Durway.** Mr. Weaver was born at Ames, Tex., January 12, 1881, and was educated at Polytechnic College (now Texas Wesleyan), at Fort Worth. He began his career with the F.W.&D.C. and the W. V. at Fort Worth in May 1903 as a clerk in the accounting department, and has served with those roads continuously since that time. From 1907 to 1923 he held the positions successively of traveling auditor; head clerk, agents bureau; chief clerk, freight accounting department; and chief clerk to auditor of revenues, subsequently becoming auditor of revenues. Mr. Weaver was advanced to treasurer in January 1943 and in 1946 he was also appointed secretary.

As reported in the January 8 *Railway Age*, **Henry A. Fett** has been promoted to comptroller of the WABASH, the ANN ARBOR and the NEW JERSEY, INDIANA & ILLINOIS. Mr. Fett was born on May 29, 1898, at St. Louis, Mo., and received his higher education at St. Louis University School of Commerce & Finance. He began his railroad career in October, 1913, as a clerk with the Missouri Pacific, entering the service of the Wabash in November, 1917, in a similar capacity. From 1924 to 1929 he served as traveling accountant and special accountant, subsequently being appointed auditor of capital expenditures. After



A realistic answer to that question may well run into five or even six figures per winter. Frozen steam lines not only cost money to thaw, they rob you of important revenue by keeping cars out of service.

Yet, this loss is completely unnecessary.

Because your frozen pipe problem can be virtually or totally solved—through use of the Honeywell Economy Car-Heating System!

You see, this remarkable system has a bare minimum of under-car piping. And this small amount of piping almost *never* freezes, even in severest weather—because steam is exposed to cold air only for brief periods of time.

That's just the beginning of the money-saving benefits you can expect from the Honeywell Economy System. For specific facts on what the system can do for *your* railroad, call your local Honeywell office or send the coupon on the opposite page.

MINNEAPOLIS
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serving as special accountant and general accountant from 1931 to December, 1942, he was advanced to assistant comptroller in January, 1943, and

Henry A. Fett

in January, 1945, was made auditor. In May, 1947, Mr. Fett became general auditor, the position he held prior to his recent promotion.

OPERATING

R. A. Gordon, superintendent for the Atlantic division of the CANADIAN NATIONAL'S express department, has been appointed general superintendent, Western district, with headquarters at Winnipeg, Man. **L. E. Ostrander,** assistant industrial commissioner, Western region, has been promoted to industrial commissioner at Winnipeg, and has been succeeded by **H. Tomkins,** chief clerk in the industrial department.

A. N. Garrett, Jr., has been appointed trainmaster of the Mountain subdivision of the CHESAPEAKE & OHIO at Charlottesville, Va., succeeding **W. C. Fox,** transferred.

Walter H. Flowers, assistant to president of the ATLANTIC & DANVILLE, at Norfolk, Va., has been appointed superintendent of the company.

A. L. Springfield, trainmaster of the SOUTHERN PACIFIC at Ennis, Tex., has been promoted to the newly-created post of supervisor of operations, with headquarters at Houston, Tex. Succeeding Mr. Springfield is **B. H. Carpenter,** yardmaster at Beaumont, Tex.

C. K. Strader, assistant superintendent of the BALTIMORE & OHIO CHICAGO TERMINAL at Chicago, has been promoted to superintendent, succeeding the late **L. E. Thornton,** whose death was reported in the December 2, 1950, *Railway Age*. **C. E. Bertrand,** trainmaster at Chicago, succeeds Mr. Strader.

Louis W. Awe, assistant superintendent, Gary division, of the ELGIN,

JOLIET & EASTERN, has been appointed superintendent of the road's newly-created Gary Mill Division, with headquarters at Gary, Ind. **Frank H. Herrold,** assistant trainmaster, and **George Meers, Jr.,** assistant general yardmaster of the Gary division, have been appointed trainmasters of the new division.

James A. Johnson, assistant trainmaster of the SOUTHERN at Knoxville, Tenn., has been advanced to trainmaster at Birmingham, Ala.

P. V. Stone, assistant trainmaster of the SOUTHERN PACIFIC at Mulford, Cal., has been advanced to terminal trainmaster at West Oakland, succeeding **J. L. Harrison, Jr.,** who has been transferred to Oakland Pier.

David T. Ayers, superintendent of freight car service for the SOUTHERN PACIFIC, with headquarters at San Francisco, Cal., has retired. He is succeeded by **L. J. Lyons,** assistant superintendent of freight car service. Mr. Ayers started railroading in 1899 as an office boy for the terminal agent of the Galveston, Houston & Henderson at Galveston, Tex. Subsequently he held various clerical posts with other Texas roads until 1911, when he joined the S. P. as a clerk at Bakersfield, Cal. Two years later he was transferred to the general office at San Francisco, where he was advanced through oper-

L. J. Lyons

ating positions to freight car service agent in 1924, and to his present position in 1941.

Mr. Lyons began service with the S.P. in 1917 as a telegraph department messenger at San Francisco. He was advanced through various clerical positions in the operating department and for a short time was located at Sacramento, Cal. In 1943 he was transferred to Chicago as supervisor of labor employment, and the following year became eastern car service agent there. Mr. Lyons returned to San Francisco in 1949 as assistant superintendent of freight car service.

TRAFFIC

A. D. Carter has been appointed division freight agent of the NASHVILLE, CHATTANOOGA & ST. LOUIS at Atlanta, Ga. He succeeds the late **Charles T. Love,** whose death was reported in the February 5 *Railway Age.*

Harris R. Richards, general freight agent of the BESSEMER & LAKE ERIE, has been appointed traffic manager, with headquarters as before at Pittsburgh, Pa. **Charles G. Hoover,** assistant general freight agent, has been appointed general freight agent. Mr. Richards was born at Hilliards, Pa., on August 21, 1902, and entered railroad service on July 26, 1918, as station clerk with the B.&L.E. He served successively as station clerk and relief agent at various stations until October 1, 1924, when he became tariff clerk in the general offices at Pittsburgh. He was appointed chief rate and percentage clerk on June 17, 1940; assistant general freight agent on June

Harris R. Richards

1, 1945; and general freight agent on October 1, 1947.

Mr. Hoover was born at Pittsburgh on October 10, 1898, and attended the University of Pittsburgh. He entered railroad service on September 16, 1916, as yard clerk with the Pennsylvania at Pittsburgh and was subsequently employed by the Grasselli Chemical Company. During World War I he was with the United States Marine Corps. On March 1, 1921, Mr. Hoover entered the service of the B.&L.E. as tariff clerk in the freight traffic department and was appointed rate clerk on July 1, 1923; freight claim agent on January 1, 1946; and assistant general freight agent on September 1, 1947.

Charles B. Willi, chief clerk to freight traffic manager of the WABASH at St. Louis, Mo., has been appointed division freight and passenger agent at Moberly, Mo., succeeding **Frank T. Clougher,** who, at his own request, is returning to Toledo, Ohio.

J. Leon Fortier, general freight agent (rates) of the CHICAGO, INDIANAPOLIS & LOUISVILLE, has been ap-

pointed assistant freight traffic manager (rates), with headquarters remaining at Chicago. His former post has been abolished. **Carl L. Froelich** has been appointed assistant general freight agent at Washington, D. C.

Charles D. Santor, general agent of the DELAWARE, LACKAWANNA & WESTERN at Houston, Tex., has been transferred in that capacity to Kansas City, Mo. He is succeeded by **Willard S. Wilcox,** traveling freight agent at Boston, Mass.

A. C. Mattson and **L. Hill,** general freight agents of the CHICAGO, ROCK ISLAND & PACIFIC at Kansas City, Mo., and St. Louis, respectively, and **T. M. Savary,** assistant general freight agent at Little Rock, Ark., have been transferred to the road's general offices at Chicago.

Leon H. Robbins, commissioner of the agricultural and mineral development department of the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC, at Chicago, has retired. He is succeeded by **Lyman B. Horton,** assistant commissioner since 1948.

A. C. Lennartz, general freight agent of the NEW YORK CENTRAL SYSTEM, has been appointed assistant freight traffic manager, with headquarters as before at Detroit, Mich. He succeeds **J. L. Meehan,** who has become freight traffic manager, as reported in the December 30, 1950, *Railway Age*. Succeeding Mr. Lennartz is **E. F. Leuchtmann,** assistant general freight agent at Detroit, who is in turn replaced by **D. B. Zellers,** division freight agent at that point. **R. T. Mason,** general agent at Detroit, succeeds Mr. Zellers. **J. P. Roth** has been made division freight agent at Louisville, Ky.

PURCHASES & STORES

C. B. Shearouse has been appointed purchasing agent of the ATLANTA & SAINT ANDREWS BAY, with headquarters at Dothan, Ala.

H. L. Griep has been appointed assistant purchasing agent of the MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE at Minneapolis, Minn.

As reported in the *Railway Age* of February 5, **Samuel Meyers** has been appointed purchasing agent and general storekeeper of the LEHIGH & HUDSON RIVER at Warwick, N. Y. Mr. Meyers was born on April 17, 1887, at Belvidere, N. J., and attended Easton (Pa.) business college during 1904-1905. He entered railroad service in 1905 with the Pennsylvania and joined the L. & H.R. on June 25, 1906. He was appointed general storekeeper at Warwick on November 1, 1910, and on June 1, 1918, was given additional duties as manager of fire protection.

MECHANICAL

George E. McCoy, assistant chief of car equipment of the CANADIAN NATIONAL at Montreal, Que., has retired under the pension rules of the company. Mr. McCoy was born at Moncton, N. B., and entered railroad service in 1900 as mechanical draftsman's apprentice with the Intercolonial (now C.N.), becoming draftsman in 1905. In 1914 he was appointed assistant chief draftsman of the Canadian Government Railways (now C.N.), and in 1916 became assistant master car builder. Mr. McCoy was appointed master car builder of the eastern lines of the C.N. in 1918, superintendent of car equipment of the Atlantic region in 1923, general superintendent car equipment of the same region at Moncton in 1928, assistant general superintendent car equipment of the Central region at Toronto, Ont., in 1932, and assistant chief of car equipment of the system at Montreal in 1943.

W. H. Elsner, mechanical engineer of the GREAT NORTHERN, with headquarters at St. Paul, Minn., has retired. He is succeeded by **W. C. Miller,** chief draftsman in the mechanical department at St. Paul. Mr. Elsner started with the G. N. as draftsman in 1910, and subsequently held the posi-

tions of chief draftsman and assistant mechanical engineer. He has served as mechanical engineer for the past 20 years. Mr. Miller entered the service of the G. N. in 1918 as draftsman, and has served as chief draftsman for 10 years.

ENGINEERING & SIGNALING

G. W. Salmon has been appointed engineer of bridges of the SEABOARD AIR LINE at Norfolk, Va., succeeding **W. N. Downey,** who has resigned to accept employment with another railroad. Mr. Salmon began his railroad engineering career in 1929, and has

G. W. Salmon

had experience in bridge and structural design and construction. For the past several years he has been associated with Schenley Industries, Inc., as supervising engineer at Los Angeles, Cal., and San Francisco.

As reported in the January 22 *Railway Age*, **A. E. DeMattei** has been advanced to superintendent of telegraph of the SOUTHERN PACIFIC at San

A. E. DeMattei

Francisco, Cal., with jurisdiction over the road's communications services in six western states. Mr. DeMattei first entered the service of the S. P. in 1909 at San Francisco, as an office boy for

the road's general storekeeper. Subsequently he was promoted through various clerical positions, and in 1923 was appointed chief clerk to superintendent of telegraph. He was made assistant to superintendent of telegraph in 1937, being further promoted to assistant superintendent of telegraph in 1943, the position he held until his latest advancement.

William E. Manning, track supervisor of the Danville division of the SOUTHERN at Salisbury, N. C., has been appointed chief engineer of the ATLANTIC & DANVILLE.

E. A. Bleakley, assistant chief engineer of the SAVANNAH & ATLANTA, has been appointed chief engineer, with headquarters as before at Savannah, Ga., succeeding **J. A. MacLeod,** whose death was reported in the *Railway Age* of December 23, 1950. The position of assistant chief engineer has been abolished. Shortly after graduation from the Georgia School of Technology, Mr. Bleakley joined the S.&A., working on the location survey of the extension of the railway to Camak, Ga., and later served as resident engineer during construction of this line which formed a connecting link between the S.&A. and the Georgia, and established a through route to Atlanta. Upon completion of this work, Mr. Bleakley became associated with the engineering firm of Westinghouse-Church-Kerr and was one of the engineers assigned to construction of the first unit of the Savannah Sugar Refinery at Port Wentworth. Mr. Bleakley served two years

E. A. Bleakley

in the United States Army in World War I, including 18 months on overseas duty as first lieutenant in the 30th Infantry. He returned to S.&A. service in 1927 as assistant engineer. On November 1, 1950, he was appointed assistant chief engineer.

John E. Hoving, district engineer of the NORTHERN PACIFIC at St. Paul, Minn., has been appointed to the newly-created position of special engineer to the president. He is succeeded by **D. H. Shoemaker,** principal assistant engineer at St. Paul, who is in turn succeeded by **W. R. Bjorklund,** office engineer at that point. **J. A. Young,** division engineer at Spokane, Wash., becomes Mr. Bjorklund's successor.

As reported in the *Railway Age* of February 5, Thomas E. MacMannis, engineer maintenance of way of the Jersey Central Lines at Jersey City, N. J., has resigned to become engineer maintenance of way of the Reading at Philadelphia, Pa.

I. D. Talmadge has been appointed engineer maintenance of way of the LEHIGH & HUDSON RIVER at Warwick, N. Y., succeeding **J. Nelson Shaw,** who has been appointed engineering assistant.

A. C. Danks has been appointed bridge engineer of the UNION at East Pittsburgh, Pa.

A. E. Emery, superintendent of communications of the CANADIAN PACIFIC at Moose Jaw, Sask., has been transferred to the Quebec district at Montreal, Que., succeeding his father, **W. S. Emery,** who retired on February 1, after 48 years of service. W. S. Emery began his career in 1899 with Western Union at St. John, N. B., and joined the C.P. in 1904 at Fredericton, N. B., as telegraph operator. After holding various positions at St. John and Halifax, N. S., he became chief operator at Montreal in 1922 and superintendent of telegraphs in 1930. In 1945 his title was changed to superintendent of communications, with authority increased over forms of communication other than telegraph.

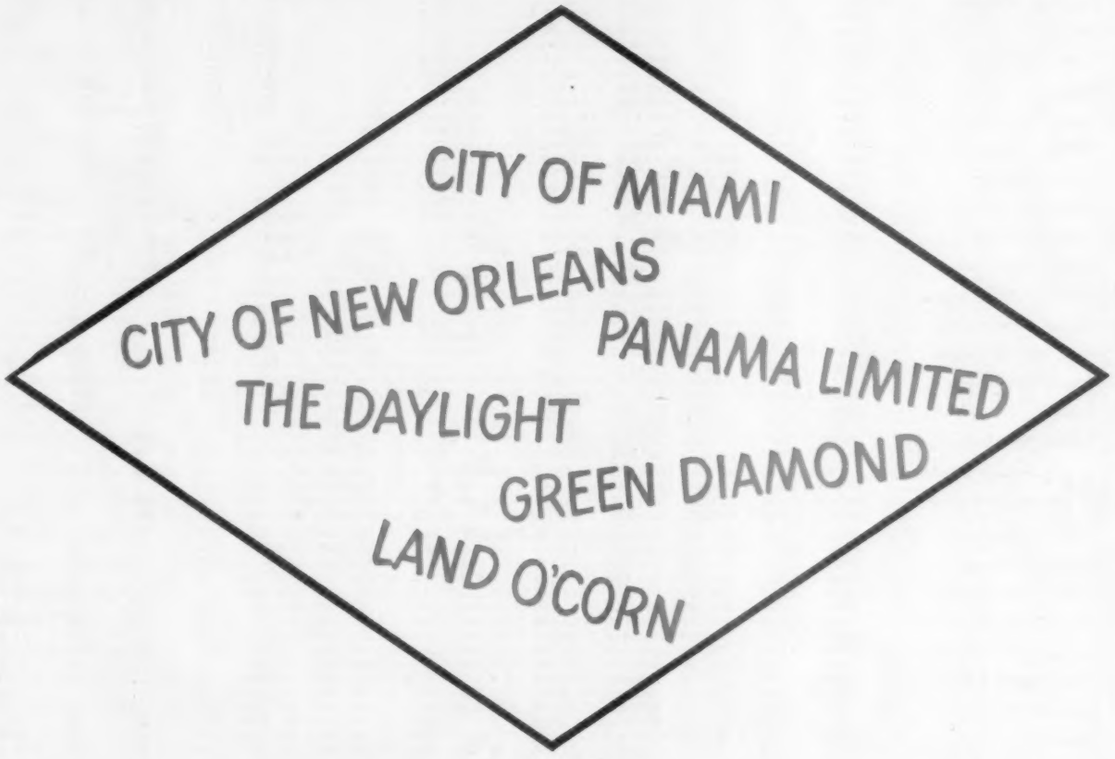
SPECIAL

Alex Kanya, assistant to manager personnel and safety of the MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE, has been advanced to assistant manager personnel and safety, with headquarters as before at Minneapolis, Minn.

Dr. S. M. English, acting medical and surgical director of the BALTIMORE

(Continued on page 150)

Illinois Central rolls into its second century—on TIMKEN® bearings



THE Illinois Central Railroad, "Main Line of Mid-America", this year starts its second century of service. First great railroad built west of the Alleghenies, the Illinois Central now directly serves 2200 communities in 14 Mid-western and Southern states.

Good examples of their passenger service are the famous "name trains" listed above. Every one of these trains uses Timken® tapered roller bearings to help provide a fast, smooth ride and on-time schedules—with maximum operating economy.

You can look for even greater progress in the next 100 years on the pioneering Illinois Central. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

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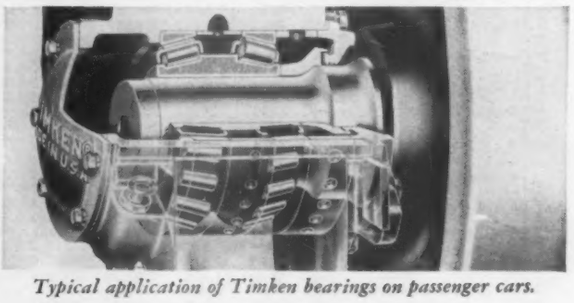

Typical application of Timken bearings on passenger cars.

NOT JUST A BALL ◯ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ◫ AND THRUST —◫— LOADS OR ANY COMBINATION ✳

Freight Operating Statistics of Large Steam Railways — Selected

	Region, Road and Year		Miles of road operated	Train-miles	Locomotive Miles: Principal and helper	Locomotive Miles: Light	Car Miles: Loaded (*thousands*)	Car Miles: Per cent loaded	Ton-Miles (*thousands*): Gross excl.locos. & tenders	Ton-Miles (*thousands*): Net rev. and non-rev.	Road-locos. on lines: Serviceable Unstored	Road-locos. on lines: Serviceable Stored	Road-locos. on lines: B.O.	Road-locos. on lines: Per Cent B.O.
New Eng. Region	Boston & Maine	1950	1,700	273,849	283,381	14,622	11,152	71.3	681,484	294,653	89	3	15	14.0
		1949	1,701	246,195	253,689	12,483	9,628	69.8	587,420	243,508	82	9	24	20.9
	N. Y., N. H. & Htfd.	1950	1,771	293,765	294,439	21,215	12,017	70.6	733,909	342,930	98	..	12	10.9
		1949	1,774	252,926	253,711	17,581	10,602	69.4	630,502	277,146	100	19	8	6.3
Great Lakes Region	Delaware & Hudson	1950	793	255,635	305,850	27,812	11,268	72.5	785,003	430,834	145	31	23	11.6
		1949	794	210,442	253,644	28,532	9,064	68.7	610,381	309,038	125	52	18	9.2
	Del., Lack. & Western	1950	966	281,028	304,883	33,470	12,792	72.3	812,175	375,532	86	1	38	30.4
		1949	966	244,328	270,859	28,923	11,394	68.9	730,920	321,086	91	33	28	18.4
	Erie	1950	2,228	687,821	717,705	54,435	38,193	70.4	2,377,421	1,012,442	206	1	21	9.2
		1949	2,231	577,564	595,531	39,384	32,029	67.9	1,972,471	776,063	164	51	55	20.4
	Grand Trunk Western	1950	974	269,969	278,321	2,983	9,512	65.2	643,892	284,053	55	..	10	15.4
		1949	971	230,658	238,735	1,759	7,723	65.9	502,776	208,774	52	..	7	11.9
	Lehigh Valley	1950	1,228	247,164	260,838	25,132	12,817	73.5	842,704	415,996	56	2	23	28.4
		1949	1,239	222,133	235,354	24,693	11,069	67.1	749,917	347,681	56	16	18	20.0
	New York Central	1950	10,691	3,192,314	3,392,877	191,846	120,766	64.3	8,415,805	3,852,767	1,005	39	365	25.9
		1949	10,680	2,684,791	2,811,323	141,847	97,185	62.6	6,468,749	2,799,474	899	222	368	24.7
	New York, Chic. & St. L.	1950	2,162	784,243	799,648	12,968	31,612	68.2	2,085,453	957,777	204	1	39	16.0
		1949	2,162	633,038	649,436	7,970	24,844	67.2	1,660,960	732,842	181	43	50	18.2
	Pitts. & Lake Erie	1950	221	86,529	88,956	94	3,778	69.3	315,069	195,061	27	..	14	34.1
		1949	221	58,575	59,288	36	2,202	65.9	187,389	111,374	18	9	22	44.9
	Wabash	1950	2,381	548,074	554,046	8,831	23,116	72.5	1,420,181	614,059	143	10	67	30.5
		1949	2,381	589,109	596,720	9,859	22,226	69.3	1,371,903	560,523	147	13	52	24.5
Central Eastern Region	Baltimore & Ohio	1950	6,086	1,923,797	2,324,576	237,398	71,114	64.4	5,331,661	2,672,120	683	39	260	26.5
		1949	6,086	1,471,037	1,768,370	189,818	54,913	63.2	3,989,386	1,876,981	707	112	260	24.1
	Central of New Jersey	1950	410	73,485	74,317	5,426	2,986	67.2	222,748	117,552	37	..	5	11.9
		1949	415	59,326	59,400	4,415	2,454	67.6	167,918	85,001	21	8	7	19.4
	Central of Pennsylvania	1950	212	71,634	79,732	14,183	2,883	70.7	210,260	115,266	33	..	18	35.3
		1949	212	54,953	58,771	7,364	2,418	67.9	161,341	80,819	21	9	15	33.3
	Chicago & Eastern Ill.	1950	886	126,549	126,549	2,245	5,376	71.2	338,276	162,423	25	..	..	..
		1949	909	114,577	114,740	2,599	4,195	69.5	264,073	122,093	35	8	2	4.4
	Elgin, Joliet & Eastern	1950	238	97,285	103,585	924	3,986	69.0	317,949	182,529	40	..	..	..
		1949	238	84,664	85,140	...	3,007	63.9	229,980	120,062	29	4	1	2.9
	Pennsylvania System	1950	10,008	3,250,800	3,575,132	410,445	144,309	68.7	9,989,190	5,019,885	1,254	..	364	22.5
		1949	10,039	2,574,309	2,795,549	342,532	109,607	65.8	7,564,198	3,556,642	1,244	167	428	23.3
	Reading	1950	1,315	378,302	391,396	27,281	15,180	67.7	1,175,888	653,501	178	15	32	14.2
		1949	1,323	318,134	332,101	28,831	11,205	62.7	863,465	445,756	142	48	50	20.8
	Western Maryland	1950	837	188,000	225,428	27,909	7,060	65.5	572,437	323,621	139	26	16	8.8
		1949	836	132,773	154,605	17,983	4,637	65.2	362,059	197,114	114	54	11	6.1
Pocahontas Region	Chesapeake & Ohio	1950	5,042	1,503,949	1,588,433	66,877	65,893	57.6	5,585,097	3,073,740	520	8	172	24.6
		1949	5,041	1,029,039	1,083,100	38,582	40,279	59.1	3,153,991	1,638,380	466	121	132	18.4
	Norfolk & Western	1950	2,105	724,157	758,815	46,924	34,594	59.5	2,990,761	1,615,852	237	19	33	11.4
		1949	2,107	504,825	530,024	34,224	21,589	60.3	1,718,351	880,093	210	86	44	12.9
Southern Region	Atlantic Coast Line	1950	5,480	736,557	739,080	12,128	21,869	64.8	1,480,205	682,170	315	13	89	21.3
		1949	5,507	683,101	691,034	12,195	18,407	61.9	1,268,224	564,244	337	40	78	17.1
	Central of Georgia	1950	1,783	273,234	275,939	4,442	7,587	70.6	493,696	233,485	103	2	7	6.3
		1949	1,783	258,037	261,159	4,615	6,993	70.2	449,251	208,948	99	4	11	9.6
	Gulf, Mobile & Ohio	1950	2,851	319,085	319,085	217	16,127	74.7	1,009,425	478,299	64	..	3	4.5
		1949	2,854	311,143	311,143	290	15,000	71.8	959,780	445,124	68	26	4	4.1
	Illinois Central	1950	6,543	1,517,797	1,520,904	53,988	55,091	64.9	3,922,444	1,839,411	565	5	87	13.2
		1949	6,542	1,339,829	1,342,848	45,215	49,767	65.6	3,360,253	1,569,291	539	31	82	12.6
	Louisville & Nashville	1950	4,769	1,150,099	1,238,443	35,160	37,989	64.6	2,770,391	1,418,081	336	15	131	27.2
		1949	4,774	1,024,597	1,089,170	25,486	27,880	65.9	1,896,281	947,959	314	81	69	14.9
	Nash., Chatt. & St. Louis	1950	1,049	221,760	224,048	3,634	6,688	77.0	414,334	200,656	90	..	4	4.3
		1949	1,049	185,775	187,013	2,904	5,594	73.7	345,951	159,657	60	..	1	1.6
	Seaboard Air Line	1950	4,136	650,254	667,074	3,446	22,255	66.2	1,501,305	687,202	220	39	14	5.1
		1949	4,139	631,592	645,466	3,864	19,174	64.2	1,324,505	601,578	230	33	58	18.1
	Southern	1950	6,320	1,235,420	1,245,362	14,330	43,551	71.9	2,686,707	1,226,012	371	22	179	31.3
		1949	6,179	1,114,580	1,122,177	11,896	36,746	69.1	2,270,203	986,278	419	97	202	28.1
Northwestern Region	Chicago & North Western	1950	7,974	988,311	1,002,228	24,757	37,311	65.7	2,597,606	1,100,675	310	4	106	25.2
		1949	8,073	950,654	982,953	25,601	31,728	65.4	2,185,329	967,704	331	15	118	25.4
	Chicago Great Western	1950	1,441	171,176	171,412	5,168	9,820	71.5	637,188	291,871	34	..	1	2.9
		1949	1,445	170,291	170,885	4,979	8,773	67.9	558,357	236,262	43	3	1	2.1
	Chic., Milw., St. P. & Pac.	1950	10,664	1,395,388	1,457,870	53,533	55,776	65.2	3,790,484	1,716,144	453	31	93	16.1
		1949	10,663	1,344,299	1,403,504	55,857	48,048	65.7	3,169,066	1,381,527	447	58	77	13.2
	Chic., St. P., Minn. & Omaha	1950	1,606	227,993	238,212	12,540	6,745	69.7	465,270	222,076	73	..	24	24.7
		1949	1,606	201,181	211,622	11,708	5,612	67.6	381,575	168,011	76	..	29	27.6
	Duluth, Missabe & Iron Range	1950	560	187,574	188,844	1,542	9,223	50.3	944,058	569,374	50	..	2	3.8
		1949	574	145,464	146,056	1,348	7,415	50.7	750,942	453,667	43	..	5	10.4
	Great Northern	1950	8,220	1,228,400	1,229,396	48,175	52,381	64.8	3,930,395	1,988,965	375	44	59	12.3
		1949	8,222	1,210,815	1,212,692	54,623	47,566	59.5	3,662,311	1,728,221	379	42	62	12.8
	Minneap., St. P. & S. St. M.	1950	4,179	458,794	470,129	6,339	16,624	65.1	1,155,882	558,043	106	..	16	13.1
		1949	4,179	409,241	414,366	3,430	14,040	66.5	946,253	451,036	116	..	10	7.9
	Northern Pacific	1950	6,608	930,338	980,417	54,966	39,313	71.9	2,652,760	1,294,302	351	3	57	13.9
		1949	6,592	934,450	991,179	56,408	36,466	66.1	2,563,463	1,161,411	316	13	73	18.2
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1950	13,073	2,564,793	2,675,918	94,525	107,803	68.3	7,013,122	2,794,007	636	58	168	19.5
		1949	13,102	2,335,736	2,450,398	97,302	95,790	69.2	6,095,736	2,369,534	632	151	111	12.4
	Chic., Burl. & Quincy	1950	8,796	1,327,428	1,357,575	45,725	57,320	65.8	3,880,858	1,744,380	386	21	150	26.9
		1949	8,839	1,234,370	1,270,113	45,372	51,837	66.7	3,336,074	1,433,744	406	34	123	21.8
	Chic., Rock I. & Pac.	1950	7,579	994,668	1,023,608	15,310	34,639	67.4	2,321,108	1,056,115	222	37	79	23.4
		1949	7,589	1,038,684	1,070,502	13,178	37,434	67.1	2,420,009	1,074,340	244	30	109	28.5
	Denver & R. G. Wn.	1950	2,400	418,990	462,721	44,638	16,324	71.0	1,048,301	505,815	135	10	27	15.7
		1949	2,413	379,854	409,859	51,193	13,672	70.6	903,267	411,494	123	27	40	21.1
	Southern Pacific	1950	8,069	2,161,689	2,311,056	313,835	96,205	69.2	6,340,493	2,659,036	744	6	161	17.7
		1949	8,067	1,979,219	2,152,914	331,102	84,613	65.4	5,699,450	2,261,418	736	25	168	18.1
	Union Pacific	1950	9,720	2,890,845	3,004,607	216,508	120,856	67.2	8,062,010	3,265,705	698	4	92	11.6
		1949	9,721	2,454,444	2,543,826	178,448	102,508	64.0	6,943,973	2,784,649	589	60	157	19.5
	Western Pacific	1950	1,192	287,685	306,552	24,287	14,132	78.1	878,497	413,802	70	1	15	17.4
		1949	1,192	230,840	253,681	25,887	10,806	78.1	646,573	291,846	68	9	47	37.9
Southwestern Region	International-Gt. Northern*	1950	1,089	186,241	186,846	1,056	6,293	66.6	453,305	203,837	54	5	10	14.5
		1949	1,110	153,954	154,105	302	5,202	68.0	365,032	174,634	62	17	4	4.8
	Kansas City Southern	1950	886	162,057	162,667	1,106	8,910	68.9	591,435	269,356	32	6	20	34.5
		1949	886	189,569	193,827	1,694	9,276	67.9	616,380	275,655	46	..	6	11.5
	Mo.-Kans.-Texas Lines	1950	3,231	405,352	409,628	5,391	15,104	66.4	958,766	407,163	86	6	36	28.1
		1949	3,241	449,805	461,619	8,981	16,265	67.4	1,025,648	446,696	102	2	45	30.2
	Missouri Pacific*#	1950	6,949	1,332,013	1,356,951	25,041	50,493	69.7	3,270,525	1,465,342	361	..	58	13.8
		1949	....	....	....	....	....	....	....	....	..	..	..	..
	Texas & Pacific	1950	1,844	334,190	334,190	12,381	13,372	68.9	868,503	355,368	84	1	6	6.6
		1949	1,852	278,320	278,320	10,917	10,155	65.7	675,068	275,530	108	10	2	1.7
	St. Louis-San Francisco	1950	4,604	673,311	682,301	7,457	23,576	66.7	1,547,632	683,280	204	77	69	19.7
		1949	4,614	742,412	752,947	8,393	25,540	67.3	1,691,160	764,112	234	49	45	13.7
	St. Louis Southw. Lines	1950	1,562	359,989	362,050	5,027	15,160	72.5	917,060	409,939	72	9	22	21.4
		1949	1,562	364,488	367,757	5,075	15,366	73.0	897,728	401,297	86	6	16	14.8
	Texas & New Orleans	1950	4,314	804,644	804,713	20,334	27,556	67.7	1,837,681	816,393	212	..	55	20.6
		1949	4,314	798,970	798,997	24,952	25,509	68.8	1,670,069	739,404	205	2	55	21.0

Items for the Month of September 1950 Compared with September 1949

Region	Road and Year	Freight cars on line: Home	Foreign	Total	Per Cent B.O.	G.t.m.per train-hr. excl.locos. and tenders	G.t.m.per train-mi. excl.locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
New Eng. Region	Boston & Maine 1950	1,506	9,299	10,805	3.4	38,063	2,493	1,078	26.4	882	46.8	5,778	15.3	101.5
	1949	2,947	8,363	11,310	3.2	36,283	2,390	991	25.3	728	41.2	4,772	15.2	84.1
	N. Y., N. H. & Htfd. 1950	1,638	16,153	17,791	1.6	35,328	2,501	1,169	28.5	605	30.0	6,455	14.1	108.7
	1949	2,487	14,715	17,202	2.7	34,523	2,499	1,098	26.1	551	30.3	5,208	13.8	81.7
Great Lakes Region	Delaware & Hudson 1950	2,077	7,436	9,513	7.3	55,595	3,084	1,693	38.2	1,488	53.6	18,110	18.1	59.6
	1949	6,790	4,177	10,967	4.1	51,921	2,915	1,476	34.1	945	40.3	12,974	17.9	51.0
	Del., Lack. & Western 1950	5,265	11,038	16,303	9.1	44,547	2,957	1,367	29.4	741	34.9	12,958	15.4	99.5
	1949	7,480	7,132	14,612	8.4	43,536	3,048	1,339	28.2	692	35.6	11,080	14.6	73.5
	Erie 1950	7,608	24,634	32,242	3.6	58,413	3,482	1,483	26.5	1,053	56.4	15,147	16.9	123.9
	1949	12,282	16,199	28,421	8.3	56,834	3,438	1,353	24.2	883	53.7	11,595	16.6	85.3
	Grand Trunk Western 1950	3,822	10,806	14,628	4.9	46,934	2,405	1,061	29.9	643	33.0	9,721	19.7	155.9
	1949	5,013	7,318	12,331	12.1	45,128	2,195	911	27.0	551	30.9	7,167	20.7	138.1
	Lehigh Valley 1950	4,481	12,515	16,996	7.1	65,402	3,481	1,719	32.5	830	34.8	11,292	19.2	129.2
	1949	10,399	8,816	19,215	13.0	61,686	3,439	1,594	31.4	616	29.2	9,354	18.3	102.7
	New York Central 1950	53,067	124,824	177,891	5.7	42,763	2,675	1,225	31.9	717	34.9	12,012	16.2	95.2
	1949	73,236	75,586	148,822	9.4	41,948	2,446	1,059	28.8	614	34.0	8,737	17.4	74.5
	NewYork, Chic. & St. L. 1950	5,060	22,361	27,421	3.9	45,844	2,707	1,243	30.3	1,195	57.8	14,767	17.2	118.9
	1949	11,331	13,609	24,940	3.0	49,829	2,658	1,173	29.5	989	49.9	11,299	19.0	86.9
	Pitts. & Lake Erie 1950	4,308	11,156	15,464	14.6	48,051	3,643	2,255	51.6	413	11.5	29,421	13.2	75.9
	1949	6,298	7,836	14,134	11.4	46,545	3,200	1,902	50.6	259	7.8	16,798	14.5	44.4
	Wabash 1950	6,079	14,232	20,311	3.2	54,515	2,622	1,134	26.6	1,040	54.0	8,597	21.0	89.9
	1949	7,443	14,606	22,049	3.1	47,467	2,360	964	25.2	909	52.0	7,847	20.4	100.7
Central Eastern Region	Baltimore & Ohio 1950	36,516	52,574	89,090	8.6	37,290	2,827	1,417	37.6	986	40.8	14,635	13.5	89.8
	1949	59,509	32,801	92,310	12.8	38,225	2,761	1,299	34.2	679	31.4	10,280	14.1	62.7
	Central of New Jersey 1950	426	9,678	10,104	3.9	36,781	3,147	1,661	39.4	379	14.3	9,557	12.1	101.6
	1949	1,464	8,382	9,846	7.8	38,834	2,914	1,475	34.6	284	12.1	6,827	13.7	93.2
	Central of Pennsylvania 1950	1,048	3,713	4,761	14.7	44,024	3,129	1,715	40.0	796	28.2	18,124	15.0	72.4
	1949	2,863	3,049	5,912	11.1	42,990	3,120	1,563	33.4	484	21.3	12,707	14.6	60.6
	Chicago & Eastern Ill. 1950	1,833	3,873	5,706	8.7	43,480	2,679	1,286	30.2	975	45.3	6,111	16.3	184.8
	1949	2,987	3,614	6,601	11.4	38,310	2,312	1,069	29.1	597	29.5	4,477	16.6	94.3
	Elgin, Joliet & Eastern 1950	5,659	12,376	18,035	1.8	23,232	3,440	1,975	45.8	334	10.6	25,564	7.1	119.5
	1949	6,456	9,663	16,119	1.5	22,060	2,859	1,492	39.9	241	9.5	16,815	8.1	110.3
	Pennsylvania System 1950	89,869	126,300	216,169	13.8	45,067	3,182	1,599	34.8	768	32.2	16,720	14.7	89.4
	1949	143,779	87,031	230,810	14.5	44,530	3,021	1,420	32.4	513	24.0	11,809	15.2	61.7
	Reading 1950	10,131	23,363	33,494	6.1	38,703	3,109	1,728	43.1	641	22.0	16,565	12.5	74.8
	1949	16,913	13,012	29,925	8.5	35,175	2,715	1,401	39.8	494	19.8	11,231	13.0	57.8
	Western Maryland 1950	4,393	3,504	7,897	2.3	42,057	3,097	1,751	45.8	1,368	45.6	12,888	13.8	50.3
	1949	8,376	3,036	11,412	1.4	38,460	2,764	1,505	42.5	611	22.0	7,859	14.1	34.9
Pocahontas Region	Chesapeake & Ohio 1950	44,136	29,547	73,683	5.9	61,152	3,762	2,070	46.6	1,397	52.0	20,321	16.5	86.6
	1949	64,439	21,592	86,031	6.4	52,436	3,083	1,601	40.7	639	26.6	10,834	17.1	56.9
	Norfolk & Western 1950	24,925	8,377	33,302	3.1	67,396	4,200	2,269	46.7	1,649	59.3	25,588	16.3	100.5
	1949	43,838	6,226	50,064	5.2	57,628	3,443	1,763	40.8	599	24.4	13,923	16.9	59.9
Southern Region	Atlantic Coast Line 1950	10,295	18,468	28,763	3.6	32,249	2,018	930	31.2	826	40.8	4,149	16.0	66.3
	1949	13,364	13,068	26,432	5.6	30,251	1,869	831	30.7	718	37.8	3,415	16.3	56.1
	Central of Georgia 1950	1,695	6,659	8,354	3.2	30,941	1,815	858	30.8	1,037	47.7	4,365	17.1	92.8
	1949	3,356	4,968	8,324	9.8	30,626	1,747	813	29.9	835	39.8	3,906	17.6	86.3
	Gulf, Mobile & Ohio 1950	3,189	12,071	15,260	2.3	60,006	3,174	1,504	29.7	1,043	47.1	5,592	19.0	172.6
	1949	4,147	11,764	15,911	2.0	57,099	3,088	1,432	29.7	998	46.9	5,199	18.5	108.3
	Illinois Central 1950	15,169	31,455	46,624	2.4	45,501	2,611	1,224	33.4	1,305	60.2	9,371	17.6	85.3
	1949	25,436	32,199	57,635	1.8	43,737	2,536	1,184	31.5	953	46.1	7,996	17.4	75.6
	Louisville & Nashville 1950	29,521	17,056	46,577	9.1	37,584	2,416	1,237	37.3	1,040	43.1	9,912	15.6	96.3
	1949	47,188	12,623	59,811	6.5	29,980	1,856	929	34.0	548	24.5	6,619	16.2	84.9
	Nash., Chatt. & St. Louis 1950	1,285	4,945	6,230	3.0	37,391	1,880	910	30.0	1,038	45.0	6,376	20.0	100.2
	1949	3,296	3,973	7,269	12.5	36,100	1,868	862	28.5	727	34.6	5,073	19.4	105.5
	Seaboard Air Line 1950	8,357	15,817	24,174	2.2	40,957	2,355	1,078	30.9	990	48.4	5,538	17.7	92.7
	1949	10,632	11,595	22,227	2.5	36,770	2,146	975	31.4	903	44.8	4,845	17.5	76.6
	Southern 1950	11,900	28,185	40,085	3.0	36,535	2,194	1,001	28.2	1,016	50.1	6,466	16.8	77.8
	1949	17,580	27,413	44,993	5.0	34,924	2,050	890	26.8	725	39.1	5,321	17.1	56.5
Northwestern Region	Chicago & North Western 1950	17,709	37,676	55,385	3.3	40,962	2,761	1,170	29.5	660	34.1	4,601	15.6	90.8
	1949	21,526	32,196	53,722	3.1	35,679	2,426	1,074	30.5	600	30.0	3,996	15.5	80.0
	Chicago Great Western 1950	1,090	6,288	7,378	3.0	63,879	3,747	1,716	29.7	1,307	61.5	6,752	17.2	176.8
	1949	1,611	5,386	6,997	5.6	58,910	3,284	1,389	26.9	1,115	61.0	5,450	18.0	143.1
	Chic., Milw., St. P. & Pac. 1950	24,137	43,841	67,978	2.4	43,680	2,741	1,241	30.8	860	42.8	5,364	16.1	94.5
	1949	30,172	30,175	60,347	2.3	38,591	2,386	1,040	28.8	728	38.5	4,319	16.4	89.7
	Chic., St. P., Minn. & Omaha 1950	1,228	9,395	10,623	2.3	28,299	2,146	1,024	32.9	687	29.9	4,609	13.9	88.0
	1949	1,035	7,632	8,667	2.9	25,467	1,980	872	29.9	615	30.4	3,487	13.4	76.2
	Duluth, Missabe & Iron Range 1950	13,174	1,851	15,025	2.6	82,149	5,234	3,157	61.7	1,252	40.3	33,891	16.3	141.9
	1949	14,351	365	14,716	3.4	89,122	5,402	3,263	61.2	1,033	33.3	26,345	17.3	127.1
	Great Northern 1950	20,631	25,197	45,828	3.0	49,058	3,236	1,638	38.0	1,538	62.5	8,066	15.3	96.7
	1949	24,659	26,042	50,701	2.5	46,289	3,061	1,444	36.3	1,108	51.2	7,006	15.3	96.2
	Minneap., St. P. & S. St. M. 1950	6,365	12,547	18,912	4.0	44,618	2,558	1,235	33.6	1,060	48.5	4,451	17.7	143.1
	1949	6,887	8,270	15,157	4.9	40,330	2,330	1,111	32.1	927	43.3	3,598	17.4	119.1
	Northern Pacific 1950	16,539	20,326	36,865	4.8	46,897	2,869	1,400	32.9	1,172	49.5	6,529	16.4	91.5
	1949	18,978	16,435	35,413	5.0	46,411	2,758	1,249	31.8	1,029	48.8	5,873	16.9	93.6
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.) 1950	41,669	32,749	74,418	3.9	55,910	2,753	1,097	25.9	1,227	69.3	7,124	20.4	113.8
	1949	45,041	29,557	74,598	4.9	53,256	2,622	1,019	24.7	1,050	61.3	6,028	20.4	100.6
	Chic., Burl. & Quincy 1950	13,192	30,777	43,969	2.7	53,278	2,933	1,318	30.4	1,334	66.6	6,611	18.2	88.8
	1949	18,148	25,688	43,836	3.9	50,385	2,716	1,167	27.7	1,131	61.2	5,407	18.6	84.3
	Chic., Rock I. & Pac. 1950	10,436	22,322	32,758	2.9	42,770	2,345	1,067	30.5	1,058	51.5	4,645	18.3	108.1
	1949	9,965	26,232	36,197	3.6	41,515	2,340	1,039	28.7	1,067	55.4	4,719	17.8	100.3
	Denver & R. G. Wn. 1950	7,392	8,523	15,915	4.2	41,068	2,514	1,213	31.0	1,058	48.1	7,025	16.4	103.3
	1949	9,002	7,839	16,841	4.4	40,605	2,395	1,091	30.1	772	36.3	5,684	17.1	84.3
	Southern Pacific 1950	23,054	41,253	64,307	2.8	47,630	2,976	1,248	27.6	1,329	69.5	10,985	16.2	103.4
	1949	27,004	38,467	65,471	4.7	46,065	2,910	1,154	26.7	1,153	66.0	9,344	16.0	94.9
	Union Pacific 1950	25,125	43,855	68,980	2.3	59,609	2,826	1,145	27.0	1,602	88.3	11,199	21.4	142.1
	1949	26,035	37,877	63,912	3.6	63,537	2,881	1,155	27.2	1,440	82.8	9,549	22.5	116.4
	Western Pacific 1950	1,676	4,945	6,621	7.9	63,070	3,068	1,445	29.3	2,194	96.0	11,572	20.7	122.6
	1949	2,316	4,054	6,370	8.6	56,312	2,809	1,268	27.0	1,727	81.9	8,161	20.1	78.8
Southwestern Region	International-Gt. Northern* 1950	726	7,258	7,984	1.5	45,937	2,452	1,103	32.4	819	37.9	6,239	18.9	98.4
	1949	774	5,862	6,636	1.8	42,171	2,395	1,146	33.6	882	38.6	5,244	17.8	72.8
	Kansas City Southern 1950	1,067	6,483	7,550	2.4	71,043	3,683	1,677	30.2	1,210	58.1	10,134	19.5	105.1
	1949	1,621	6,775	8,396	7.3	58,094	3,270	1,462	29.7	1,160	57.5	10,371	17.9	130.9
	Mo.-Kans.-Texas Lines 1950	2,701	9,381	12,082	2.6	43,984	2,369	1,006	27.0	1,336	74.6	4,201	18.6	114.1
	1949	3,113	10,292	13,405	3.5	42,080	2,290	997	27.5	1,149	62.1	4,594	18.5	109.6
	Missouri Pacific*# 1950	14,350	21,120	35,470	2.0	49,147	2,471	1,107	29.0	1,369	67.7	7,029	20.0	115.1
	1949	....	....	....	...	....	....	....	...	....	....	....	...	...
	Texas & Pacific 1950	2,432	6,693	9,125	5.8	53,377	2,614	1,070	26.6	1,243	67.9	6,424	20.5	133.4
	1949	2,063	6,222	8,285	6.2	47,972	2,433	993	27.1	1,119	62.7	4,959	19.8	85.6
	St. Louis-San Francisco 1950	6,029	15,233	21,262	2.9	39,586	2,307	1,018	29.0	1,072	55.5	4,947	17.2	70.7
	1949	9,147	16,800	25,947	2.8	38,444	2,289	1,034	29.9	1,056	52.5	5,520	16.9	84.2
	St. Louis Southw. Lines 1950	1,396	5,619	7,015	1.9	51,497	2,547	1,139	27.0	2,070	105.6	8,748	20.2	127.6
	1949	1,487	7,632	9,119	1.3	46,563	2,472	1,105	26.1	1,755	92.0	8,564	18.9	122.8
	Texas & New Orleans 1950	3,835	19,182	23,017	2.6	42,365	2,303	1,023	29.6	1,193	59.5	6,308	18.6	109.3
	1949	4,027	19,020	23,047	3.5	39,684	2,111	935	29.0	1,131	56.7	5,713	19.0	112.6

* Report of trustee or trustees.
\# 1949 figures not available due to strike.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

(Continued from page 146)

& OHIO, has been appointed medical and surgical director, with headquarters as before at Baltimore, Md., replacing **Dr. Fuller Nance,** who has retired because of illness.

David Wallace, supervisor of wages for the TEXAS & PACIFIC at Dallas, Tex., has retired after more than 41 years of service. Succeeding Mr. Wallace is **F. M. Conder,** assistant director of personnel.

OBITUARY

Michael Edward Malone, 63, general agent of the CANADIAN PACIFIC at Detroit, Mich., died on January 31.

Samuel M. Golden, late vice-president—operations of the CHICAGO GREAT WESTERN at Chicago, whose death was reported in the January 8 *Railway Age*, was born on September 26, 1900, and was educated at the Walton School of Commerce. Prior to entering railroad service, Mr. Golden was employed in various capacities by the Louis Geyler Company, automobile distributors, at Chicago, from 1915 to 1919; by the Illinois Car Manufacturing Company at Hammond, Ind., from 1919 to 1928, and by the Standard Steel Car Company, as assistant to president, from 1928 to 1932. He entered the service of the Great Western in 1932 as assistant to president, and in 1934 his title was changed to assistant to president in charge of maintenance of way and structures, maintenance of equipment and stores. Between February 1935 and February 1941 he held the position of assistant to the trustees for reorganization. Subsequently, Mr. Golden was advanced to vice-president in charge of maintenance of way and structures, equipment and stores, becoming vice-president—operations in May 1946.

Marshall D. White, assistant to vice-president of the SOUTHERN at Washington, D. C., died on February 4 at Georgetown hospital, after a brief illness, at the age of 48. Mr. White was born at Broadway, Va., on November 27, 1902, and entered the service of the Southern in April 1918 as a clerk at Washington. In October 1928 he was appointed manager of the mail room at Atlanta, Ga. Returning to Washington in November 1935 as mail traffic agent, he was promoted to mail and express traffic agent in August 1938. In January 1945 he was promoted to supervisor, mail and express traffic, and in November 1948 became assistant to vice-president.

Irving H. Buckle, freight claim agent of the MINNEAPOLIS & ST. LOUIS at Minneapolis, Minn., died of a heart attack on February 1 at the age of 64.

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2. Tender documents, including instructions to Tenderers, Tender Form, Schedule of requirements; Particular Specification, Conditions of Contract and Drawings can be obtained from the Embassy of Pakistan, Commercial Division, 1744 R St. N.W., Washington, D. C. on payment of $45.00 per set which amount will not be refunded, under any circumstances.

3. The successful Tenderer will be required to execute an agreement before commencing supplies and will also be required to deposit security not exceeding 5% of the value of the Contract in cash.

4. Tenders in sealed covers superscribed "Tenders for Locomotive Boilers, XA & XC Classes" should be submitted direct to the Director General, Railways, Ministry of Communications (Railway Division), Government of Pakistan, Karachi, and must reach him by 12-00 hrs. on 28/3/1951. These tenders will be opened at 12-00 hrs. on 29/3/1951 in the Office of the Director Mechanical Engineering & Stores, Railway Division, Ministry of Communications, in the presence of any tenderers who may desire to be present.

5. The Government of Pakistan does not bind itself to accept the lowest or any tender and reserves to itself the right to reject any or all tenders without assigning reasons therefor.

6. This call for tenders is being made simultaneously in Karachi, Dacca, London, Washington, and Ottawa.

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